

Nisqualli Road Trailer Lot Expansion

NOISE AND VIBRATION ANALYSIS
CITY OF VICTORVILLE

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LIST OF ABBREVIATED TERMS

(1) Reference

ANSI American National Standards Institute

Calveno California Vehicle Noise

CEQA California Environmental Quality Act
CNEL Community Noise Equivalent Level

dBA A-weighted decibels

EPA Environmental Protection Agency
FHWA Federal Highway Administration
FTA Federal Transit Administration

INCE Institute of Noise Control Engineering

L_{eq} Equivalent continuous (average) sound level
L_{max} Maximum level measured over the time interval

mph Miles per hour

PPV Peak Particle Velocity

Project Nisqualli Road Trailer Lot Expansion
REMEL Reference Energy Mean Emission Level

RMS Root-mean-square

SCLA Southern California Logistics Airport

VdB Vibration Decibels



EXECUTIVE SUMMARY

Urban Crossroads, Inc. has prepared this noise study to determine the noise exposure and the necessary noise mitigation measures for the proposed Nisqualli Road Trailer Lot Expansion development ("Project"). The Project site is located at the northeast of the intersection of Enterprise Way and Nisqualli Road in the City of Victorville. The Project is proposing to develop a truck and trailer parking/drop lot on 10.04-gross acres. This noise study has been prepared to satisfy applicable City of Victorville noise standards and significance criteria based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1)

The results of this Noise and Vibration Analysis are summarized below based on the significance criteria in Section 4 of this report consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) Table ES-1 shows the findings of significance for each potential noise and/or vibration impact under CEQA before and after any identified mitigation measures.

TABLE ES-1: SUMMARY OF CEQA SIGNIFICANCE FINDINGS

Analysis	Report	Significano	e Findings
Analysis	Section	Unmitigated	Mitigated
Off-Site Noise	7	Less Than Significant	-
Operational Noise	9	Less Than Significant	-
Construction Noise	10	Less Than Significant	-
Construction Vibration	10	Less Than Significant	-



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1 INTRODUCTION

This noise analysis has been completed to determine the noise impacts associated with the development of the proposed Nisqualli Road Trailer Lot Expansion ("Project"). This noise study briefly describes the proposed Project, provides information regarding noise fundamentals, sets out the local regulatory setting, presents the study methods and procedures for transportation related CNEL traffic noise analysis, and evaluates the future exterior noise environment. In addition, this study includes an analysis of the potential Project-related long-term stationary-source operational noise and short-term construction noise and vibration impacts.

1.1 SITE LOCATION

The proposed Project is located northeast of the intersection of Enterprise Way and Nisqualli Road in the City of Victorville, as shown on Exhibit 1-A. The proposed Project is located approximately 8 miles southeast of Southern California Logistics Airport (SCLA).

1.2 PROJECT DESCRIPTION

The Project is proposing to develop a truck trailer parking/drop lot on 10.04-gross acres, as shown on Exhibit 1-B. The site currently accommodates 112 truck trailers in unmarked spaces. The development of the Project would result in a net increase of 86 truck trailer spaces on-site. The site is currently undeveloped and unimproved and will be developed as an expansion to an existing industrial building located on the northeast corner of Enterprise Way and Nisqualli Road.

The on-site Project-related operational noise sources are expected to include: tractor trailer parking activity, and truck movements. This report assumes the Project will operate 24-hours a day for seven days per week.



EXHIBIT 1-A: LOCATION MAP

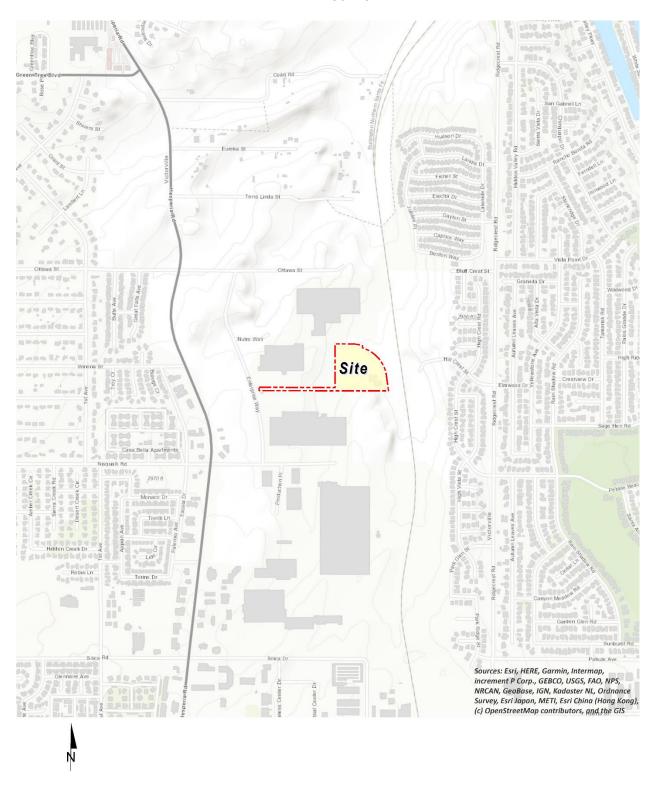
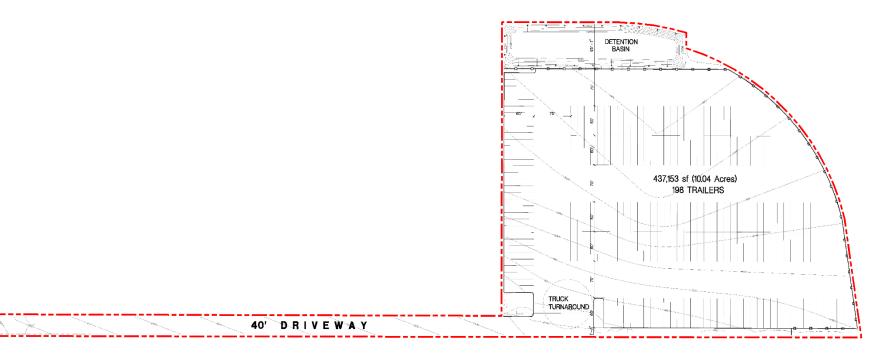




EXHIBIT 1-B: SITE PLAN



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2 FUNDAMENTALS

Noise is simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). Aweighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear. Exhibit 2-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

EXHIBIT 2-A: TYPICAL NOISE LEVELS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140		
NEAR JET ENGINE		130	INTOLERABLE OR	
		120	DEAFENING	HEARING LOSS
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100		
GAS LAWN MOWER AT 1m (3 ft)		90	VERY NOISY	
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80	VERT NOIST	
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	SPEECH INTERFERENCE
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60	1000	INTERPERENCE
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	CLEED
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		SLEEP DISTURBANCE
QUIET SUBURBAN NIGHTTIME	LIBRARY	30		
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT	
	BROADCAST/RECORDING STUDIO	10	VERY FAINT	NO EFFECT
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0	VERT FAINT	

Source: Environmental Protection Agency Office of Noise Abatement and Control, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (EPA/ONAC 550/9-74-004) March 1974.

2.1 RANGE OF NOISE

Since the range of intensities that the human ear can detect is so large, the scale frequently used to measure intensity is a scale based on multiples of 10, the logarithmic scale. The scale for measuring intensity is the decibel scale. Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud. (2) The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud). Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA



at approximately 1,000 feet, which can cause serious discomfort (3). Another important aspect of noise is the duration of the sound and the way it is described and distributed in time.

2.2 Noise Descriptors

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most used metric is the equivalent level (L_{eq}). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in Aweighted decibels (dBA). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period and is commonly used to describe the "average" noise levels within the environment.

Peak hour or average noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite 24-hour noise level is utilized. The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time-of-day corrections require the addition of 5 decibels to dBA L_{eq} sound levels in the evening from 7:00 p.m. to 10:00 p.m., and the addition of 10 decibels to dBA L_{eq} sound levels at night between 10:00 p.m. and 7:00 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when noise can become more intrusive. CNEL does not represent the actual sound level heard at any time, but rather represents the total sound exposure. The City of Victorville relies on the 24-hour CNEL level to assess land use compatibility with transportation related noise sources.

2.3 SOUND PROPAGATION

When sound propagates over a distance, it changes in level and frequency content. The way noise reduces with distance depends on the following factors.

2.3.1 GEOMETRIC SPREADING

Sound from a localized source (i.e., a stationary point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. (2)

2.3.2 GROUND ABSORPTION

The propagation path of noise from a highway to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually



sufficiently accurate for distances of less than 200 ft. For acoustically hard sites (i.e., sites with a reflective surface between the source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the cylindrical spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance from a line source. (4)

2.3.3 ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects. (2)

2.3.4 SHIELDING

A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Shielding by trees and other such vegetation typically only has an "out of sight, out of mind" effect. That is, the perception of noise impact tends to decrease when vegetation blocks the line-of-sight to nearby residents. However, for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 15 feet in height, 100 feet wide and dense enough to completely obstruct the line-of-sight between the source and the receiver. This size of vegetation may provide up to 5 dBA of noise reduction. The Federal Highway Administration (FHWA) does not consider the planting of vegetation to be a noise abatement measure. (5)

2.4 Noise Control

Noise control is the process of obtaining an acceptable noise environment for an observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to these three elements.

2.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must block the line-of-sight path of sound from the noise source.



2.6 LAND USE COMPATIBILITY WITH NOISE

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are more sensitive to noise intrusion than are commercial or industrial developments and related activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process. The FHWA encourages State and Local government to regulate land development in such a way that noise-sensitive land uses are either prohibited from being located adjacent to a highway, or that the developments are planned, designed, and constructed in such a way that noise impacts are minimized. (6)

2.7 COMMUNITY RESPONSE TO NOISE

Approximately sixteen percent of the population has a very low tolerance for noise and will object to any noise not of their making. Consequently, even in the quietest environment, some complaints may occur. Twenty to thirty percent of the population will not complain even in very severe noise environments. (7 pp. 8-6) Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Surveys have shown that community response to noise varies from no reaction to vigorous action for newly introduced noises averaging from 10 dB below existing to 25 dB above existing. (8) According to research originally published in the Noise Effects Handbook (7), the percentage of high annoyance ranges from approximately 0 percent at 45 dB or less, 10 percent are highly annoyed around 60 dB, and increases rapidly to approximately 70 percent being highly annoyed at approximately 85 dB or greater. Despite this variability in behavior on an individual level, the population can be expected to exhibit the following responses to changes in noise levels as shown on Exhibit 2-B. A change of 3 dBA is considered barely perceptible, and changes of 5 dBA are considered readily perceptible. (4)

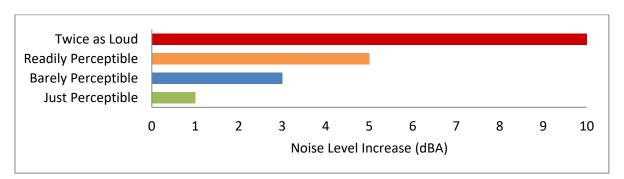


EXHIBIT 2-B: NOISE LEVEL INCREASE PERCEPTION

2.8 VIBRATION

Per the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*, vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground-borne vibrations may be described by amplitude and frequency.

Additionally, in contrast to airborne noise, ground-borne vibration outdoors is not a common environmental problem and annoyance from ground-borne vibration is almost exclusively an indoor phenomenon (8). Therefore, the effects of vibrations should only be evaluated at a structure and the effects of the building structure on the vibration should be considered. Woodframe buildings, such as typical residential structures, are more easily excited by ground vibration than heavier buildings. In contrast, large masonry buildings with spread footings have a low response to ground vibration (8). In general, the heavier a building is, the lower the response will be to the incident vibration energy. However, all structurers reduce vibration levels due to the coupling of the building to the soil.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal (8). The PPV is most frequently used to describe vibration impacts to buildings but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. Instead, the human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body (8). However, the RMS amplitude and PPV are related mathematically, and the RMS amplitude of equipment is typically calculated from the PPV reference level. The RMS amplitude is approximately 70% of the PPV (9). Thus, either can be used in the description of vibration impacts.

While not universally accepted, vibration decibel notation (VdB) is another vibration notation developed and used by the FTA in their guidance manual to describe vibration levels and provide a background of common vibration levels and set vibration limits. (8) Decibel notation (VdB) serves to reduce the range of numbers used to describe vibration levels and is used in this report to describe vibration levels.

As stated in the FTA guidance manual, the background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity



Typical background vibration

level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Exhibit 2-C illustrates common vibration sources and the human and structural response to ground-borne vibration.

Velocity Typical Sources **Human/Structural Response** Level* (50 ft from source) Threshold, minor cosmetic damage Blasting from construction projects fragile buildings Bulldozers and other heavy tracked construction equipment Difficulty with tasks such as 90 reading a VDT screen Commuter rail, upper range Residential annoyance, infrequent 80 Rapid transit, upper range events (e.g. commuter rail) Commuter rail, typical Residential annoyance, frequent Bus or truck over bump events (e.g. rapid transit) Rapid transit, typical Limit for vibration sensitive equipment. Approx. threshold for Bus or truck, typical human perception of vibration

EXHIBIT 2-C: TYPICAL LEVELS OF GROUND-BORNE VIBRATION

* RMS Vibration Velocity Level in VdB relative to 10-6 inches/second

60

Source: Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual.



3 REGULATORY SETTING

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. In most areas, automobile and truck traffic is the major source of environmental noise. Traffic activity generally produces an average sound level that remains constant with time. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies.

3.1 STATE OF CALIFORNIA NOISE REQUIREMENTS

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared per guidelines adopted by the Governor's Office of Planning and Research (OPR). (10) The purpose of the Noise and Safety Element is to *limit the exposure of the community to excessive noise levels*. In addition, the California Environmental Quality Act (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts.

3.2 CITY OF VICTORVILLE GENERAL PLAN NOISE ELEMENT

The City of Victorville General Plan Noise Element is intended to limit exposure of the community to excessive noise levels. (11) The City of Victorville General Plan Noise Element land use compatibility standards specify the noise levels allowable for new developments impacted by transportation noise sources. The Victorville Land Use Compatibility Standards, found on Table N-3 of the General Plan, identify the criteria as shown on Exhibit 3-A. For the noise sensitive residential land use, exterior noise levels of less than 65 dBA CNEL are considered normally acceptable, conditionally acceptable with exterior noise levels between 65 to 70 dBA CNEL, and normally unacceptable with exterior noise levels above 70 dBA CNEL. For non-residential land use, exterior noise levels of less than 70 dBA CNEL are generally considered as normally acceptable.



EXHIBIT 3-A: LAND USE NOISE COMPATIBILITY CRITERIA

Table N-3 Victorville Land Use Compatibility S	tand	ards					
	HOST DAY	mmur or C			Expo	sure	
Land Use Categories	55	60	65	70	75	80 +	
Residential - Low Density, Single Family, Duplex, Multi- family, Mobile Home	1	1	2	2	3	4	4
Transient Lodging - Motels, Hotels	1	1	2	2	3	3	4
Schools, Libraries, Churches, Hospitals, Nursing Homes	1	1	2	3	3	4	4
Auditoriums, Concert Halls, Amphitheaters	2	2	3	3	4	4	4
Sports Arena, Outdoor Spectator Sports	2	2	2	2	3	3	3
Playgrounds, Neighborhood Parks	1	1	1	2	3	3	3
Golf Courses, Riding Stables, Water Recreation, Cemeteries	1	1	1	2	2	4	4
Office Buildings, Business Commercial, Retail Commercial and Professional	1	1	1	2	2	3	3
Industrial, Manufacturing, Utilities	1	1	1	1	2	2	2
Agriculture	1	1	1	1	1	1	1

Legend:

- NORMALLY ACCEPTABLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
- CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken
 only after a detailed analysis of the noise reduction requirements is made and Schools, Libraries, Churches, Hospitals, Nursing Homes 1 needed noise insulation features included
 in the design. Conventional construction, with closed windows and fresh air supply systems
 or air conditioning will normally suffice.
- NORMALLY UNACCEPTABLE: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
- CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken.

Source: City of Victorville General Plan Noise Element, Table N-3.

3.3 OPERATIONAL NOISE STANDARDS

To analyze noise impacts originating from a designated fixed location or private property such as the Nisqualli Road Trailer Lot Expansion Project, stationary-source (operational) noise such as the expected tractor trailer parking activity, and truck movements are typically evaluated against standards established under a jurisdiction's municipal code.

Section 13.01.030 of the City of Victorville Municipal Code, establishes the noise level standards for stationary noise sources. For residential properties, the exterior noise level shall not exceed 65 dBA L_{eq} during the daytime hours (7:00 a.m. to 10:00 p.m.) and 55 dBA L_{eq} during the nighttime hours (10:00 p.m. to 7:00 a.m.). (12) For commercial uses, exterior noise levels shall not exceed 70 dBA L_{eq} at any time. For the industrial uses the exterior noise levels commercial uses shall not exceed 75 dBA L_{eq} at any time. The operational noise level standards are shown on Table 3-1.



TABLE 3-1: OPERATIONAL NOISE STANDARDS

Londillo	Exterior Noise Levels (dBA L _{eq}) ²				
Land Use	Daytime (7am-10pm)	Nighttime (10pm-7am)			
Residential	65	55			
Commercial	mercial 70				
Industrial	75				

¹ City of Victorville Municipal Code, Section 13.01.030 (Appendix 3.1).

3.4 Construction Noise Standards

Section 13.01.060.9 of the City of Victorville Municipal Code, provided in Appendix 3.1, indicates that construction activity is considered exempt from the noise level standards on private properties that are determined by the director of building and safety to be essential to the completion of a project. However, neither the City of Victorville General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers, which would allow for a quantified determination of what CEQA constitutes a substantial temporary or periodic noise increase. Therefore, a numerical construction threshold based on Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts, as discussed below.

According to the FTA, local noise ordinances are typically not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity, and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project. Project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Due to the lack of standardized construction noise thresholds, the FTA provides guidelines that can be considered reasonable criteria for construction noise assessment. The FTA considers a daytime exterior construction noise level of 80 dBA L_{eq} as a reasonable threshold for noise sensitive residential land use with a nighttime exterior construction noise level of 70 dBA L_{eq}. (8 p. 179)

3.5 Construction Vibration Standards

Construction activity can result in varying degrees of ground-borne vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Other construction equipment such as air compressors, light trucks, hydraulic loaders, etc., generates little or no ground vibration. (8) To analyze vibration impacts originating from the operation and construction of the Nisqualli Road Trailer Lot Expansion, vibration-generating activities are appropriately evaluated against standards established under a City of Victorville's Municipal Code, if such standards exist. However, the City of Victorville does not identify specific vibration level limits. Therefore, for analysis purposes, the Caltrans *Transportation and Construction Vibration Guidance Manual*, (9 p. 38) Table 19, vibration damage are used in this noise study to assess potential temporary construction-related impacts at adjacent building locations. The



² L_{eq} represents a steady state sound level containing the same total energy as a time varying signal over a given period.

nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).

3.6 SOUTHERN CALIFORNIA LOGISTICS AIRPORT LAND USE COMPATIBILITY

The closest airport to the Project site is the Southern California Logistics Airport (SCLA) located approximately 8 miles to the northwest with the potential to expose the Project site to aircraft-related exterior noise levels. Therefore, the Southern California Logistics Airport Comprehensive Land Use Plan future noise level contour boundaries are used in this noise study to determine the land use compatibility of the Project. (13) Exhibit 3-A shows that the Project site is not located within the future SCLA 65 dBA CNEL noise level contour boundary. Based on the Land Use Compatibility Standards (Table 3A) described on Page 3-13 of the SCLA Comprehensive Land Use Plan, the Project's warehouse land use is considered a normally acceptable land use. (13) Therefore, since the Project site falls within the normally acceptable 65 dBA CNEL contour boundaries of SCLA, no further analysis is required.



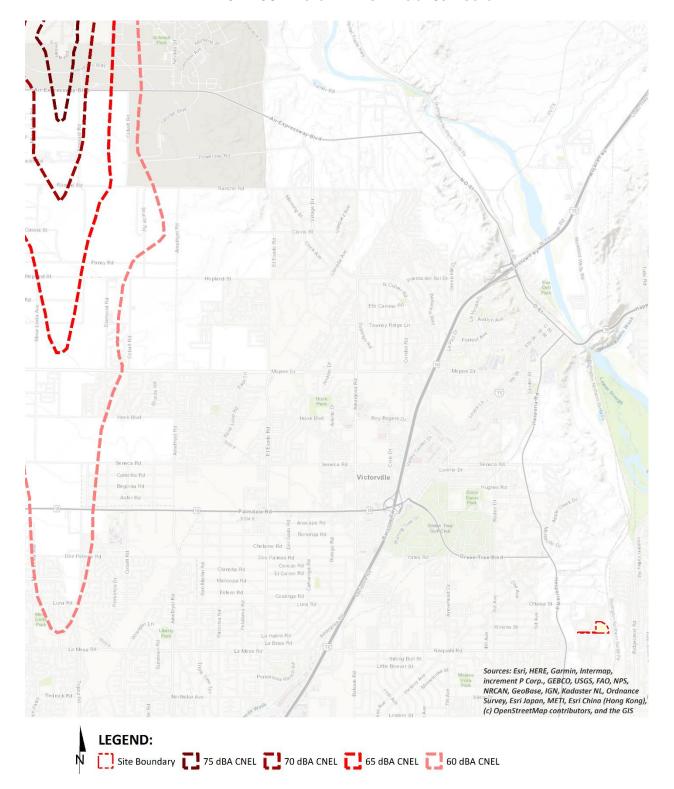


EXHIBIT 3-A: SCLA FUTURE AIRPORT NOISE CONTOURS



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4 SIGNIFICANCE CRITERIA

The following significance criteria are based on currently adopted guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. (1) For the purposes of this report, impacts would be potentially significant if the Project results in or causes:

- A. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- B. Generation of excessive ground-borne vibration or ground-borne noise levels?
- C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

4.1 Noise Level Increases (Threshold A)

Noise level increases resulting from the Project are evaluated based on the Appendix G CEQA Guidelines described above at the closest sensitive receiver locations. Under CEQA, consideration must be given to the magnitude of the increase, the existing baseline ambient noise levels, and the location of noise-sensitive receivers to determine if a noise increase represents a significant adverse environmental impact. This approach recognizes that there is no single noise increase that renders a noise impact significant. (14) This is primarily because of the wide variation in individual thresholds of annoyance and differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted—the so-called ambient environment. In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will typically be judged.

4.1.1 Noise-Sensitive Receivers

The Federal Interagency Committee on Noise (FICON) (15) developed guidance to be used for the assessment of project-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by aircraft noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative noise exposure metrics, such as the average-daily noise level (CNEL) and equivalent continuous noise level (Leq).

As previously stated, the approach used in this noise study recognizes that there is no single noise increase that renders a noise impact significant, based on a 2008 California Court of Appeal ruling on Gray v. County of Madera. (14) For example, if the ambient noise environment is quiet (<60 dBA) and the new noise source greatly increases the noise levels, an impact may occur if the noise criteria may be exceeded. Therefore, for this analysis, a readily perceptible 5 dBA or greater project-related noise level increase is considered a significant impact when the without project noise levels are below 60 dBA. Per the FICON, in areas where the without project noise levels



range from 60 to 65 dBA, a 3 dBA *barely perceptible* noise level increase appears to be appropriate for most people. When the without project noise levels already exceed 65 dBA, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact if the noise criteria for a given land use is exceeded, since it likely contributes to an existing noise exposure exceedance. The FICON guidance provides an established source of criteria to assess the impacts of substantial temporary or permanent increase in baseline ambient noise levels. Based on the FICON criteria, the amount to which a given noise level increase is considered acceptable is reduced when the without Project (baseline) noise levels are already shown to exceed certain land-use specific exterior noise level criteria. The specific levels are based on typical responses to noise level increases of 5 dBA or *readily perceptible*, 3 dBA or *barely perceptible*, and 1.5 dBA depending on the underlying without Project noise levels for noise-sensitive uses. These levels of increases and their perceived acceptance at noise sensitive receiver locations are consistent with guidance provided by both the Federal Highway Administration (4 p. 9) and Caltrans (16 p. 2 48).

4.1.2 Non-Noise-Sensitive Receivers

The City of Victorville General Plan Noise Element, Table N-3, Land Use Noise Compatibility Standards was used to establish the satisfactory noise levels of significance for non-noise-sensitive land uses in the Project study area. As previously shown on Exhibit 3-A, the normally acceptable exterior noise level for non-noise-sensitive land use is 70 dBA CNEL. To determine if Project-related traffic noise level increases are significant at off-site non-noise-sensitive land uses, a barely perceptible 3 dBA criteria is used. When the without Project noise levels are greater than the normally acceptable 70 dBA CNEL land use compatibility criteria, a barely perceptible 3 dBA or greater noise level increase is considered a significant impact since the noise level criteria is already exceeded. The noise level increases used to determine significant impacts for non-noise-sensitive land uses is generally consistent with the FICON noise level increase thresholds for noise-sensitive land uses but instead rely on the City of Victorville Land Use Compatibility Standards.

4.2 VIBRATION (THRESHOLD B)

As described in Section 3.6, the vibration impacts originating from the construction of the Nisqualli Road Trailer Lot Expansion, vibration-generating activities are appropriately evaluated using the Caltrans vibration damage thresholds to assess potential temporary construction-related impacts at adjacent building locations. The nearest noise sensitive buildings adjacent to the Project site can best be described as "older residential structures" with a maximum acceptable continuous vibration threshold of 0.3 PPV (in/sec).



4.3 CEQA Guidelines Not Further Analyzed (Threshold C)

The Project site is not located within two miles of a public airport or within an airport land use plan. The closest airport is the SCLA located approximately 8 miles northwest of the Project site. As such, the Project site would not be exposed to excessive noise levels from airport operations, and therefore, impacts are considered *less than significant*, and no further noise analysis is conducted in relation to CEQA Noise Threshold C.

4.4 SIGNIFICANCE CRITERIA SUMMARY

Noise impacts shall be considered significant if any of the following occur as a direct result of the proposed development. Table 4-1 shows the significance criteria summary matrix that includes the allowable criteria used to identify potentially significant incremental noise level increases.

TABLE 4-1: SIGNIFICANCE CRITERIA SUMMARY

A l ! -	Receiving	Constitution (a)	Significan	ce Criteria	
Analysis	Land Use	Condition(s)	Daytime	Nighttime	
		If ambient is < 60 dBA CNEL	≥ 5 dBA CNEL F	Project increase	
	Noise- Sensitive ¹	If ambient is 60 - 65 dBA CNEL	≥ 3 dBA CNEL F	Project increase	
Off-Site	Schistive	If ambient is > 65 dBA CNEL	≥ 1.5 dBA CNEL	Project increase	
Traffic	Non-Noise- Sensitive ²	If ambient is > 70 dBA CNEL	≥ 3 dBA CNEL Project increase		
		Exterior Noise Level Standards ³	See Table 3-1		
Operational	Noise-	If ambient is < 60 dBA Leq ¹	≥ 5 dBA L _{eq} Project increase		
Operational	Sensitive	If ambient is 60 - 65 dBA Leq ¹	≥ 3 dBA L _{eq} Project increase		
		If ambient is > 65 dBA Leq ¹	≥ 1.5 dBA L _{eq} Project increase		
Construction	Noise-	Noise Level Threshold ⁴	80 dBA L _{eq}	70 dBA L _{eq}	
Construction	Sensitive	Vibration Level Threshold⁵	0.3 PPV (in/sec)		

¹FICON, 1992.



² Victorville Land Use Compatibility Standards (General Plan Table N-3) for non-residential land use.

³ City of Victorville Municipal Code, Section 13.01.030 (Appendix 3.1).

⁴ Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual.

⁵ Caltrans Transportation and Construction Vibration Manual, April 2020 Table 19

[&]quot;Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

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5 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, 24-hour noise level measurements were taken at six locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 5-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. on Thursday, May 18, 2023. Appendix 5.1 includes study area photos.

5.1 Measurement Procedure and Criteria

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the equivalent daytime and nighttime hourly noise levels. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (17)

5.2 Noise Measurement Locations

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources. (2) Further, FTA guidance states, that it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community. (8)

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (8) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby sensitive receiver locations allows for a comparison of the before and after Project noise levels



and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

5.3 Noise Measurement Results

The noise measurements presented below focus on the equivalent or the hourly energy average sound levels (L_{eq}). The equivalent sound level (L_{eq}) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 5-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location.

TABLE 5-1: AMBIENT NOISE LEVEL MEASUREMENTS

Location ¹	Description	Energy A Noise (dBA	CNEL	
		Daytime	Nighttime	
L1	Located northeast of the site near the residence at 17540 Benton Way	60.2	62.6	69.0
L2	Located east of the site near the residence at 13104 High Crest St.	60.1	54.3	62.4
L3	Located southeast of the site near the residence at 12922 High Vista St.	55.1	51.9	59.3
L4	Located southwest of the site near the residence at 17047 Torino Dr.	56.6	54.2	61.4
L5	Located southwest of the site near the residence at 17066 Monaco Dr.	55.2	52.7	59.9
L6	Located west of the site near the retail building at 13010 Hesperia Rd.	58.4	54.3	61.9

¹ See Exhibit 5-A for the noise level measurement locations.

Table 5-1 provides the equivalent noise levels used to describe the daytime and nighttime ambient conditions and the calculated 24-hour CNEL. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each of the daytime and nighttime hours.



² Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.

[&]quot;Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

OTTAWAST OTTAWA NO THE RESERVE OF THE PARTY OF THE NUTRO WAY WINOWA ST Site NISQUALLI RD **LEGEND:**

EXHIBIT 5-A: NOISE MEASUREMENT LOCATIONS



Site Boundary A Measurement Locations

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6 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to estimate and analyze the future transportation related noise environment. Consistent with the City of Victorville *Land Use Compatibility Standards* guidelines outline on Exhibit 3-A, all transportation related noise levels are presented in terms of the 24-hour CNEL's.

6.1 FHWA TRAFFIC NOISE PREDICTION MODEL

The expected roadway noise level increases from vehicular traffic were calculated by Urban Crossroads, Inc. using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108. (18) The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). In California the national REMELs are substituted with the California Vehicle Noise (Calveno) Emission Levels. (19) Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period. Research conducted by Caltrans has shown that the use of soft site conditions is appropriate for the application of the FHWA traffic noise prediction model used in this analysis. (20)

Table 6-1 presents the roadway parameters used to assess the Project's off-site transportation noise impacts. Table 6-1 identifies the 8 off-site study area roadway segments, the distance from the centerline to adjacent receiving land use based on the functional roadway classifications per the City of Victorville General Plan Circulation Element, and the vehicle speeds. The ADT volumes used in this study are presented on Table 6-2 are based on the *Nisqualli Road Trailer Lot Expansion Traffic Analysis* prepared by Urban Crossroads, Inc. (21) for the following traffic conditions:

- 1. Existing Without Project
- 2. Existing With Project (E+P)
- 3. Opening Year Cumulative (2024) Without Project
- 4. Opening Year Cumulative (2024) With Project
- 5. Horizon Year (2033) Without Project
- 6. Horizon Year (2033) With Project

The ADT volumes vary for each roadway segment based on the existing traffic volumes and the combination of project traffic distributions. This analysis relies on a comparative evaluation of the off-site traffic noise impacts at the boundary of the right-of-way of the receiving adjacent land use, without and with project ADT traffic volumes from the Project traffic analysis. The



Project is anticipated to generate a total of 184 net new two-way trips per day (actual vehicles) that includes 114 truck trips.

TABLE 6-1: OFF-SITE ROADWAY PARAMETERS

ID	Roadway	Segment	Classification ¹	Receiving Land Use ²	Distance from Centerline to Receiving Land Use (Feet) ³	Vehicle Speed (mph)
1	Hesperia Rd.	n/o Ottawa St.	Super Arterial	Non-Sensitive	62'	50
2	Hesperia Rd.	s/o Ottawa St.	Super Arterial	Sensitive	62'	50
3	Hesperia Rd.	s/o Nisqualli Rd.	Super Arterial	Non-Sensitive	62'	50
4	Enterprise St.	n/o Nisqualli Rd.	Collector	Non-Sensitive	32'	40
5	Ottawa St.	w/o Hesperia Rd.	Collector	Sensitive	32'	40
6	Ottawa St.	e/o Hesperia Rd.	Collector	Non-Sensitive	32'	40
7	Nisqualli Rd.	w/o Hesperia Rd.	Major Arterial	Sensitive	50'	45
8	Nisqualli Rd.	e/o Hesperia Rd.	Major Arterial	Non-Sensitive	50'	45

¹ Nisqualli Road Trailer Lot Expansion Traffic Analysis, Urban Crossroads, Inc.

TABLE 6-2: AVERAGE DAILY TRAFFIC VOLUMES

			Average Daily Traffic Volumes ¹						
ID	Roadway	Segment	Existing		OYC (2024)		HY (2033)		
וט	Noadway	Roadway Segment		Without Project	With Project	Without Project	With Project	Without Project	With Project
1	Hesperia Rd.	n/o Ottawa St.	35,091	35,112	37,108	37,129	44,091	44,112	
2	Hesperia Rd.	s/o Ottawa St.	34,819	34,837	37,869	37,887	44,798	44,816	
3	Hesperia Rd.	s/o Nisqualli Rd.	39,113	39,130	42,887	42,905	50,671	50,688	
4	Enterprise St.	n/o Nisqualli Rd.	978	1,116	997	1,136	1,192	1,330	
5	Ottawa St.	w/o Hesperia Rd.	561	584	656	679	768	791	
6	Ottawa St.	e/o Hesperia Rd.	579	586	2,717	2,724	2,832	2,839	
7	Nisqualli Rd.	w/o Hesperia Rd.	17,346	17,488	22,567	22,709	26,019	26,161	
8	Nisqualli Rd.	e/o Hesperia Rd.	3,227	3,404	8,724	8,901	9,366	9,543	

 $^{^{\}rm 1}$ Nisqualli Road Trailer Lot Expansion Traffic Analysis, Urban Crossroads, Inc.

To quantify the off-site noise levels, the Project related truck trips were added to the heavy truck category in the FHWA noise prediction model. The addition of the Project related truck trips increases the percentage of heavy trucks in the vehicle mix. This approach recognizes that the FHWA noise prediction model is significantly influenced by the number of heavy trucks in the vehicle mix. Table 6-3 provides the time of day (daytime, evening, and nighttime) vehicle splits. The daily Project truck trip-ends were assigned to the individual off-site study area roadway segments based on the Project truck trip distribution percentages documented in the *Nisqualli*



² Based on a review of existing aerial imagery.

³ Distance to receiving land use is based upon the right-of-way distances.

Road Trailer Lot Expansion Traffic Analysis. Using the Project truck trips in combination with the Project trip distribution, Urban Crossroads, Inc. calculated the number of additional Project truck trips and vehicle mix percentages for each of the study area roadway segments. Table 6-4 shows the traffic flow by vehicle type (vehicle mix) used for all without Project traffic scenarios, and Tables 6-5 to 6-7 show the vehicle mixes used for the with Project traffic scenarios.

TABLE 6-3: TIME OF DAY VEHICLE SPLITS

Vahiala Tuna		Total of Time of		
Vehicle Type	Daytime	Evening	Nighttime	Day Splits
Autos	80.92%	9.50%	9.58%	100.00%
Medium Trucks	84.62%	2.80%	12.59%	100.00%
Heavy Trucks	82.37%	4.28%	13.34%	100.00%

¹ Based on the March 16, 2023, daily directional vehicle classification count collected on Hesperia Road south of Nisqualli Road (Nisqualli Road Trailer Lot Expansion Traffic Analysis, Urban Crossroads, Inc.)

TABLE 6-4: DISTRIBUTION OF TRAFFIC FLOW BY VEHICLE TYPE (VEHICLE MIX)

Classification	Total % Traffic Flow ¹			Total	
	Autos	Medium Trucks	Heavy Trucks	Total	
All Segments	97.72%	0.73%	1.55%	100.00%	

¹Based on the March 16, 2023, daily directional vehicle classification count collected on Hesperia Road south of Nisqualli Road (Nisqualli Road Trailer Lot Expansion Traffic Analysis, Urban Crossroads, Inc.)

TABLE 6-5: EXISTING WITH PROJECT VEHICLE MIX

			With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Hesperia Rd.	n/o Ottawa St.	97.72%	0.73%	1.55%	100.00%
2	Hesperia Rd.	s/o Ottawa St.	97.72%	0.73%	1.55%	100.00%
3	Hesperia Rd.	s/o Nisqualli Rd.	97.72%	0.73%	1.55%	100.00%
4	Enterprise St.	n/o Nisqualli Rd.	87.79%	1.46%	10.76%	100.00%
5	Ottawa St.	w/o Hesperia Rd.	95.37%	0.90%	3.73%	100.00%
6	Ottawa St.	e/o Hesperia Rd.	97.74%	0.72%	1.53%	100.00%
7	Nisqualli Rd.	w/o Hesperia Rd.	97.08%	0.78%	2.14%	100.00%
8	Nisqualli Rd.	e/o Hesperia Rd.	94.49%	0.96%	4.55%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.



[&]quot;Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

TABLE 6-6: OYC 2024 WITH PROJECT VEHICLE MIX

			With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Hesperia Rd.	n/o Ottawa St.	97.72%	0.73%	1.55%	100.00%
2	Hesperia Rd.	s/o Ottawa St.	97.72%	0.73%	1.55%	100.00%
3	Hesperia Rd.	s/o Nisqualli Rd.	97.72%	0.73%	1.55%	100.00%
4	Enterprise St.	n/o Nisqualli Rd.	87.96%	1.44%	10.60%	100.00%
5	Ottawa St.	w/o Hesperia Rd.	95.70%	0.87%	3.43%	100.00%
6	Ottawa St.	e/o Hesperia Rd.	97.72%	0.73%	1.55%	100.00%
7	Nisqualli Rd.	w/o Hesperia Rd.	97.23%	0.77%	2.00%	100.00%
8	Nisqualli Rd.	e/o Hesperia Rd.	96.48%	0.82%	2.70%	100.00%

¹ Total of vehicle mix percentage values rounded to the nearest one-hundredth.

TABLE 6-7: HY 2045 WITH PROJECT VEHICLE MIX

			With Project ¹			
ID	Roadway	Segment	Autos	Medium Trucks	Heavy Trucks	Total ²
1	Hesperia Rd.	n/o Ottawa St.	97.72%	0.73%	1.55%	100.00%
2	Hesperia Rd.	s/o Ottawa St.	97.72%	0.73%	1.55%	100.00%
3	Hesperia Rd.	s/o Nisqualli Rd.	97.72%	0.73%	1.55%	100.00%
4	Enterprise St.	n/o Nisqualli Rd.	89.38%	1.34%	9.28%	100.00%
5	Ottawa St.	w/o Hesperia Rd.	95.98%	0.85%	3.16%	100.00%
6	Ottawa St.	e/o Hesperia Rd.	97.72%	0.73%	1.55%	100.00%
7	Nisqualli Rd.	w/o Hesperia Rd.	97.29%	0.76%	1.94%	100.00%
8	Nisqualli Rd.	e/o Hesperia Rd.	96.56%	0.81%	2.62%	100.00%

 $^{^{\}rm 1}\, {\rm Total}$ of vehicle mix percentage values rounded to the nearest one-hundredth.



7 OFF-SITE TRAFFIC NOISE ANALYSIS

To assess the off-site transportation CNEL noise level impacts associated with development of the proposed Project, noise contours were developed based on the Nisqualli Road Trailer Lot Expansion Traffic Analysis prepared by Urban Crossroads, Inc. (21) Noise contour boundaries represent the equal levels of noise exposure and are measured in CNEL from the center of the roadway.

7.1 Noise Contours

Noise contours were used to assess the Project's incremental 24-hour dBA CNEL traffic-related noise impacts at receiving land uses adjacent to roadways conveying Project traffic. The noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 70, 65, and 60 dBA CNEL noise levels. The noise contours do not consider the effect of any existing noise barriers or topography that may attenuate ambient noise levels. In addition, because the noise contours reflect modeling of vehicular noise on area roadways, they appropriately do not reflect noise contributions from the surrounding stationary noise sources within the Project study area.

Tables 7-1 through 7-6 present a summary of the exterior traffic noise levels, without barrier attenuation, for the eight study area roadway segments analyzed under each traffic condition. Appendix 7.1 includes a summary of the traffic noise level contours for each of the traffic scenarios.

TABLE 7-1: EXISTING WITHOUT PROJECT CONTOURS

15	Receiving Land Use ¹	Commont	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Land Use (dBA)²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL			
1	Hesperia Rd.	n/o Ottawa St.	Non-Sensitive	73.5	56	122	262	
2	Hesperia Rd.	s/o Ottawa St.	Sensitive	73.4	RW	111	240	
3	Hesperia Rd.	s/o Nisqualli Rd.	Non-Sensitive	73.9	RW	75	161	
4	Enterprise St.	n/o Nisqualli Rd.	Non-Sensitive	59.9	75	162	350	
5	Ottawa St.	w/o Hesperia Rd.	Sensitive	57.5	75	161	347	
6	Ottawa St.	e/o Hesperia Rd.	Non-Sensitive	57.6	170	367	790	
7	Nisqualli Rd.	w/o Hesperia Rd.	Sensitive	70.3	166	358	770	
8	Nisqualli Rd.	e/o Hesperia Rd.	Non-Sensitive	63.0	166	358	771	

¹ Based on a review of existing aerial imagery.



² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-2: EXISTING WITH PROJECT CONTOURS

ID	David .	Some out	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
וט	Road	Segment	(dE	Land Use (dBA)²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Clark St.	n/o Cajalco Rd.	Non-Sensitive	73.5	106	227	490	
2	Clark St.	s/o Cajalco Rd.	Sensitive	73.4	105	226	487	
3	Seaton Av.	n/o Cajalco Rd.	Non-Sensitive	73.9	113	244	527	
4	Seaton Av.	s/o Cajalco Rd.	Non-Sensitive	65.9	RW	RW	79	
5	Seaton Av.	n/o Rider St.	Sensitive	59.6	RW	RW	RW	
6	Harvill Av.	n/o Cajalco Rd.	Non-Sensitive	57.6	RW	RW	RW	
7	Harvill Av.	s/o Cajalco Rd.	Sensitive	71.0	RW	125	269	
8	Cajalco Rd.	w/o Clark St.	Non-Sensitive	65.7	RW	RW	119	

¹ Based on a review of existing aerial imagery.

TABLE 7-3: OPENING YEAR CUMULATIVE (2024) WITHOUT PROJECT CONTOURS

ID	Pand	Commont.	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
וט	Road	Segment	Land Use ¹	Land Use (dBA)²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Clark St.	n/o Cajalco Rd.	Non-Sensitive	73.7	110	236	508	
2	Clark St.	s/o Cajalco Rd.	Sensitive	73.8	111	239	515	
3	Seaton Av.	n/o Cajalco Rd.	Non-Sensitive	74.3	121	260	560	
4	Seaton Av.	s/o Cajalco Rd.	Non-Sensitive	60.0	RW	RW	RW	
5	Seaton Av.	n/o Rider St.	Sensitive	58.1	RW	RW	RW	
6	Harvill Av.	n/o Cajalco Rd.	Non-Sensitive	64.3	RW	RW	62	
7	Harvill Av.	s/o Cajalco Rd.	Sensitive	71.5	63	135	292	
8	Cajalco Rd.	w/o Clark St.	Non-Sensitive	67.4	RW	RW	155	

 $^{^{\}rm 1}\,{\rm Based}$ on a review of existing aerial imagery.



 $^{^{2}}$ The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-4: OPENING YEAR CUMULATIVE (2024) WITH PROJECT CONTOURS

10	D Road Segment Receiving Land Use ¹		Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
וט		Land Use (dBA)²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL			
1	Clark St.	n/o Cajalco Rd.	Non-Sensitive	73.7	110	236	509	
2	Clark St.	s/o Cajalco Rd.	Sensitive	73.8	111	239	516	
3	Seaton Av.	n/o Cajalco Rd.	Non-Sensitive	74.3	121	260	560	
4	Seaton Av.	s/o Cajalco Rd.	Non-Sensitive	65.9	RW	RW	79	
5	Seaton Av.	n/o Rider St.	Sensitive	60.1	RW	RW	RW	
6	Harvill Av.	n/o Cajalco Rd.	Non-Sensitive	64.3	RW	RW	62	
7	Harvill Av.	s/o Cajalco Rd.	Sensitive	72.0	68	146	314	
8	Cajalco Rd.	w/o Clark St.	Non-Sensitive	68.5	RW	RW	185	

¹ Based on a review of existing aerial imagery.

TABLE 7-5: HORIZON YEAR (2033) WITHOUT PROJECT CONTOURS

ID	Road	Samuent	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID	Road	Segment	Land Use ¹ Land (dl	Land Use (dBA)²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	
1	Clark St.	n/o Cajalco Rd.	Non-Sensitive	74.5	123	265	570	
2	Clark St.	s/o Cajalco Rd.	Sensitive	74.5	124	268	577	
3	Seaton Av.	n/o Cajalco Rd.	Non-Sensitive	75.1	135	290	626	
4	Seaton Av.	s/o Cajalco Rd.	Non-Sensitive	60.7	RW	RW	RW	
5	Seaton Av.	n/o Rider St.	Sensitive	58.8	RW	RW	RW	
6	Harvill Av.	n/o Cajalco Rd.	Non-Sensitive	64.5	RW	RW	64	
7	Harvill Av.	s/o Cajalco Rd.	Sensitive	72.1	69	149	321	
8	Cajalco Rd.	w/o Clark St.	Non-Sensitive	67.7	RW	RW	162	

 $^{^{\}mbox{\scriptsize 1}}$ Based on a review of existing aerial imagery.



 $^{^{2}}$ The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

TABLE 7-6: HORIZON YEAR (2033) WITH PROJECT CONTOURS

) Road Segment	_	Receiving	CNEL at Receiving	Distance to Contour from Centerline (Feet)			
ID		Land Use ¹	Land Use (dBA)²	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL		
1	Clark St.	n/o Cajalco Rd.	Non-Sensitive	74.5	123	265	571	
2	Clark St.	s/o Cajalco Rd.	Sensitive	74.5	124	268	577	
3	Seaton Av.	n/o Cajalco Rd.	Non-Sensitive	75.1	135	291	626	
4	Seaton Av.	s/o Cajalco Rd.	Non-Sensitive	66.1	RW	RW	82	
5	Seaton Av.	n/o Rider St.	Sensitive	60.5	RW	RW	RW	
6	Harvill Av.	n/o Cajalco Rd.	Non-Sensitive	64.5	RW	RW	64	
7	Harvill Av.	s/o Cajalco Rd.	Sensitive	72.5	74	159	342	
8	Cajalco Rd.	w/o Clark St.	Non-Sensitive	68.8	RW	RW	192	

Based on a review of existing aerial imagery.

7.2 Existing Project Traffic Noise Level Increases

An analysis of existing traffic noise levels plus traffic noise generated by the proposed Project has been included in this report to fully analyze all the existing traffic scenarios identified in the *Nisqualli Road Trailer Lot Expansion Traffic Analysis*. This condition is provided solely for informational purposes and will not occur, since the Project will not be fully developed and occupied under Existing conditions. Table 7-1 shows the Existing without Project conditions CNEL noise levels. The Existing without Project exterior noise levels are expected to range from 57.5 to 73.9 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-2 shows the Existing with Project conditions will range from 57.6 to 73.9 dBA CNEL. Table 7-7 shows that the Project off-site traffic noise level impacts will range from less than 0.0 to 6.0 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

For an off-site traffic noise level impact to be considered significant, receivers need to perceive an increase of traffic noise levels over time. Therefore, consistent with guidance from the City of Victorville, off-site traffic impacts are limited to noise sensitive residential receivers that are likely to perceive this increase. While the analysis shows that the non-sensitive industrial uses will experience an off-site traffic noise level increase of up to 6.0 dBA CNEL, this is not considered a significant noise level impact since there are no adjacent receivers that will experience this increase over time. In addition, the Project-related off-site traffic noise level increase is largely due to the low traffic volumes that currently exist.



² The CNEL is calculated at the boundary of the right-of-way of the receiving adjacent land use.

[&]quot;RW" = Location of the respective noise contour falls within the right-of-way of the road.

7.3 OPENING YEAR CUMULATIVE 2024 TRAFFIC NOISE LEVEL INCREASES

Table 7-3 presents the Opening Year Cumulative 2024 without Project conditions CNEL noise levels. The Background 2024 without Project exterior noise levels are expected to range from 58.1 to 74.3 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-4 shows the Opening Year Cumulative 2024 with Project conditions will range from 60.1 to 74.3 dBA CNEL. Table 7-8 shows that the Project off-site traffic noise level increases will range from less than 0.0 to 5.9 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience *less than significant* noise level impacts due to unmitigated Project-related traffic noise levels.

7.4 HORIZON YEAR 2033 PROJECT TRAFFIC NOISE LEVEL INCREASES

Table 7-5 presents the Horizon Year 2033 without Project conditions CNEL noise levels. The Future Year 2033 without Project exterior noise levels are expected to range from 58.8 to 75.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. Table 7-6 shows the Horizon Year 2033 with Project conditions will range from 60.5 to 75.1 dBA CNEL. Table 7-9 shows that the Project off-site traffic noise level increases will range from less than 0.0 to 5.4 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Table 4-1, land uses adjacent to the study area roadway segments would experience less than significant noise level impacts due to unmitigated Project-related traffic noise levels.



TABLE 7-7: EXISTING PROJECT TRAFFIC NOISE LEVEL INCREASES

	Road	Segment	Receiving		CNEL at Receiving Land Use (dBA) ¹			al Noise Level Threshold ²
ID			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Hesperia Rd.	n/o Ottawa St.	Non-Sensitive	73.5	73.5	0.0	3.0	No
2	Hesperia Rd.	s/o Ottawa St.	Sensitive	73.4	73.4	0.0	1.5	No
3	Hesperia Rd.	s/o Nisqualli Rd.	Non-Sensitive	73.9	73.9	0.0	3.0	No
4	Enterprise St.	n/o Nisqualli Rd.	Non-Sensitive	59.9	65.9	6.0	n/a	No
5	Ottawa St.	w/o Hesperia Rd.	Sensitive	57.5	59.6	2.1	5.0	No
6	Ottawa St.	e/o Hesperia Rd.	Non-Sensitive	57.6	57.6	0.0	n/a	No
7	Nisqualli Rd.	w/o Hesperia Rd.	Sensitive	70.3	71.0	0.7	1.5	No
8	Nisqualli Rd.	e/o Hesperia Rd.	Non-Sensitive	63.0	65.7	2.7	n/a	No

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

[&]quot;n/a" Per the City of Victorville General Plan Noise Element Table N-3, unmitigated normally acceptable exterior noise levels of less than 70 dBA CNEL are considered less than significant and a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the non-noise sensitive noise level is greater than the normally acceptable 70 dBA CNEL land use compatibility criteria.

TABLE 7-8: OPENING YEAR CUMULATIVE (2024) TRAFFIC NOISE LEVEL INCREASES

ID	Road	Segment	Receiving	CNEL at Receiving Land Use (dBA) ¹			Incremental Noise Level Increase Threshold ²		
טו			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?	
1	Hesperia Rd.	n/o Ottawa St.	Non-Sensitive	73.7	73.7	0.0	3.0	No	
2	Hesperia Rd.	s/o Ottawa St.	Sensitive	73.8	73.8	0.0	1.5	No	
3	Hesperia Rd.	s/o Nisqualli Rd.	Non-Sensitive	74.3	74.3	0.0	3.0	No	
4	Enterprise St.	n/o Nisqualli Rd.	Non-Sensitive	60.0	65.9	5.9	n/a	No	
5	Ottawa St.	w/o Hesperia Rd.	Sensitive	58.1	60.1	2.0	5.0	No	
6	Ottawa St.	e/o Hesperia Rd.	Non-Sensitive	64.3	64.3	0.0	n/a	No	
7	Nisqualli Rd.	w/o Hesperia Rd.	Sensitive	71.5	72.0	0.5	1.5	No	
8	Nisqualli Rd.	e/o Hesperia Rd.	Non-Sensitive	67.4	68.5	1.1	n/a	No	

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

[&]quot;n/a" Per the City of Victorville General Plan Noise Element Table N-3, unmitigated normally acceptable exterior noise levels of less than 70 dBA CNEL are considered less than significant and a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the non-noise sensitive noise level is greater than the normally acceptable 70 dBA CNEL land use compatibility criteria.

TABLE 7-9: HORIZON YEAR 2033 PROJECT TRAFFIC NOISE LEVEL INCREASES

	Road	Segment	Receiving		CNEL at Receiving Land Use (dBA) ¹			al Noise Level Threshold ²
ID			Land Use ¹	No Project	With Project	Project Addition	Limit	Exceeded?
1	Hesperia Rd.	n/o Ottawa St.	Non-Sensitive	74.5	74.5	0.0	3.0	No
2	Hesperia Rd.	s/o Ottawa St.	Sensitive	74.5	74.5	0.0	1.5	No
3	Hesperia Rd.	s/o Nisqualli Rd.	Non-Sensitive	75.1	75.1	0.0	3.0	No
4	Enterprise St.	n/o Nisqualli Rd.	Non-Sensitive	60.7	66.1	5.4	n/a	No
5	Ottawa St.	w/o Hesperia Rd.	Sensitive	58.8	60.5	1.7	5.0	No
6	Ottawa St.	e/o Hesperia Rd.	Non-Sensitive	64.5	64.5	0.0	n/a	No
7	Nisqualli Rd.	w/o Hesperia Rd.	Sensitive	72.1	72.5	0.4	1.5	No
8	Nisqualli Rd.	e/o Hesperia Rd.	Non-Sensitive	67.7	68.8	1.1	n/a	No

¹ Based on a review of existing aerial imagery. Noise sensitive uses limited to existing residential land uses.



² The CNEL is calculated at the boundary of the right-of-way of each roadway and the property line of the receiving land use.

³ Does the Project create an incremental noise level increase exceeding the significance criteria (Table 4-1)?

[&]quot;n/a" Per the City of Victorville General Plan Noise Element Table N-3, unmitigated normally acceptable exterior noise levels of less than 70 dBA CNEL are considered less than significant and a barely perceptible 3 dBA or greater noise level increase is considered a significant impact when the non-noise sensitive noise level is greater than the normally acceptable 70 dBA CNEL land use compatibility criteria.

8 SENSITIVE RECEIVER LOCATIONS

To assess the potential for long-term operational and short-term construction noise impacts, the following sensitive receiver locations, as shown on Exhibit 8-A, were identified as representative locations for analysis. While a receptor represents an existing noise sensitive area, a receiver represents a single point in a noise prediction model that can represent one receptor or multiple receptors. Sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include schools, hospitals, single-family dwellings, mobile home parks, churches, libraries, and recreation areas. Moderately noise-sensitive land uses typically include multi-family dwellings, hotels, motels, dormitories, out-patient clinics, cemeteries, golf courses, country clubs, athletic/tennis clubs, and equestrian clubs. Land uses that are considered relatively insensitive to noise include business, commercial, and professional developments. Land uses that are typically not affected by noise include: industrial, manufacturing, utilities, agriculture, undeveloped land, parking lots, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

To describe the potential off-site Project noise levels, six receiver locations in the vicinity of the Project site were identified. The selection of receiver locations is based on FHWA guidelines and is consistent with additional guidance provided by Caltrans and the FTA, as previously described in Section 5.2. Due to the additional attenuation from distance and the shielding of intervening structures, other sensitive land uses in the Project study area that are located at greater distances than those identified in this noise study will experience lower noise levels than those presented in this report due to the additional attenuation from distance and the shielding of intervening structures. Distance is measured in a straight line from the project boundary to each receiver location.

- R1: Location R1 represents the existing noise sensitive residence at 17540 Benton Way, approximately 1,518 feet northeast of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R1 is placed at the building façade. A 24-hour noise measurement was taken near this location, L1, to describe the existing ambient noise environment.
- R2: Location R2 represents the existing noise sensitive residence at 13094 High Crest Street, approximately 823 feet east of the Project site. Receiver R2 is placed in the private outdoor living areas (backyard) facing the project site. A 24-hour noise measurement was taken near this location, L2, to describe the existing ambient noise environment.
- R3: Location R3 represents the existing noise sensitive residence at 12950 High Crest Street, approximately 1,163 feet southeast of the Project site. R3 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L3, to describe the existing ambient noise environment.
- R4: Location R4 represents the Lomitas Elementary School at 12571 1st Avenue, approximately 3,070 feet southwest of the Project site. R4 is placed near the outdoor track facing the Project site. A 24-hour noise measurement was taken near this location, L4, to describe the existing ambient noise environment.



OTTAWAST OTTAWA WO THE RESERVE OF THE SECOND MUTRO WAY WWW.ST Site 1,190 NISQUALLI RD R4 **LEGEND:** Site Boundary Receiver Locations — Distance from receiver to Project site boundary (in feet)

EXHIBIT 8-A: SENSITIVE RECEIVER LOCATIONS



- R5: Location R5 represents the existing noise sensitive residence at 17066 Monaco Drive, approximately 1,712 feet southwest of the Project site. R5 is placed in the private outdoor living areas (backyard) facing the Project site. A 24-hour noise measurement was taken near this location, L5, to describe the existing ambient noise environment.
- R6: Location R6 represents the existing noise sensitive residence at 16980 Nisqualli Road, approximately 1,190 feet west of the Project site. Since there are no private outdoor living areas (backyards) facing the Project site, receiver R6 is placed at the building façade. A 24-hour noise measurement was taken near this location, L6, to describe the existing ambient noise environment.



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9 OPERATIONAL NOISE IMPACTS

This section analyzes the potential stationary-source operational noise impacts at the nearest receiver locations, identified in Section 8, resulting from the operation of the proposed Project. Exhibit 9-A identifies the noise source locations used to assess the operational noise levels.

9.1 OPERATIONAL NOISE SOURCES

This operational noise analysis is intended to describe noise level impacts associated with the typical daytime and nighttime activities at the Project site. The on-site Project-related noise sources are expected to include: tractor trailer parking activity, and truck movements.

9.2 REFERENCE NOISE LEVELS

To estimate the Project operational noise impacts, reference noise level measurements were collected from similar types of activities to represent the noise levels expected with the development of the proposed Project. This section provides a detailed description of the reference noise level measurements shown on Table 9-1 used to estimate the Project operational noise impacts. It is important to note that the following projected noise levels assume the worst-case noise environment with the tractor trailer parking activity, and truck movements all operating at the same time. These sources of noise activity will likely vary throughout the day.

9.2.1 MEASUREMENT PROCEDURES

The reference noise level measurements presented in this section were collected using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (17)

9.2.2 TRACTOR TRAILER PARKING ACTIVITY

To evaluate the noise levels associated with truck idling, backup alarms, trailer movements and storage activities, Urban Crossroads collected a reference noise level measurement at an existing parcel hub facility to describe the potential operational noise levels associated with Project operational activities. The measured reference noise level at 50 feet from activity was measured at 62.8 dBA Leq. The reference noise level measurement includes a semi-truck with trailer pass-by event, background switcher cab trailer towing, drop-off, idling, and backup alarm events. Tractor trailer activity is estimated during all the daytime, evening, and nighttime hours.



EXHIBIT 9-A: OPERATIONAL NOISE SOURCE LOCATIONS

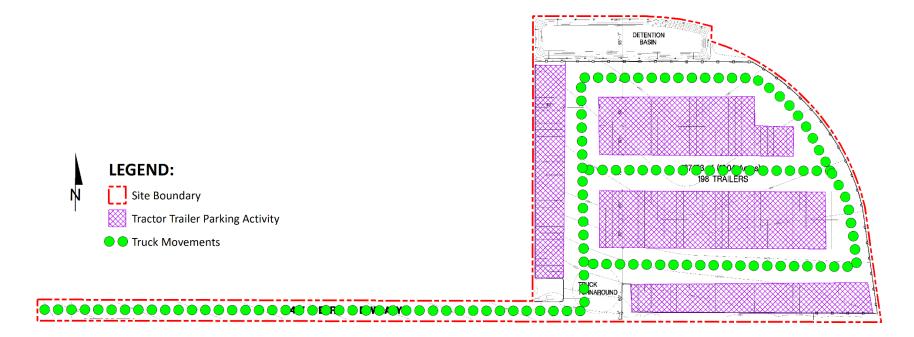


TABLE 9-1: REFERENCE NOISE LEVEL MEASUREMENTS

Reference Noise Source	Noise Source Height (Feet)	Min./ Hour ¹ Day Night		Reference Noise Level (dBA L _{eq}) @ 50 Feet	Sound Power Level (dBA) ²
Tractor Trailer Parking Activity	8'	60	60	62.8	103.4
Truck Movements	8'	60	60	59.8	93.2

¹Anticipated duration (minutes within the hour) of noise activity during typical hourly conditions expected at the Project site.

9.2.3 TRUCK MOVEMENTS

The truck movements reference noise level measurement was collected over a period of 1 hour and 28 minutes and represent multiple heavy trucks entering and existing the outdoor loading dock area producing a reference noise level of 59.8 dBA L_{eq} at 50 feet. The noise sources included at this measurement location account for trucks entering and existing the Project driveways and maneuvering in and out of the outdoor loading dock activity area.

9.3 CADNAA NOISE PREDICTION MODEL

To fully describe the exterior operational noise levels from the Project, Urban Crossroads, Inc. developed a noise prediction model using the CadnaA (Computer Aided Noise Abatement) computer program. CadnaA can analyze multiple types of noise sources using the spatially accurate Project site plan, georeferenced Nearmap aerial imagery, topography, buildings, and barriers in its calculations to predict outdoor noise levels.

Using the ISO 9613-2 protocol, CadnaA will calculate the distance from each noise source to the noise receiver locations, using the ground absorption, distance, and barrier/building attenuation inputs to provide a summary of noise level at each receiver and the partial noise level contributions by noise source. Consistent with the ISO 9613-2 protocol, the CadnaA noise prediction model relies on the reference sound power level (L_w) to describe individual noise sources. While sound pressure levels (e.g., L_{eq}) quantify in decibels the intensity of given sound sources at a reference distance, sound power levels (L_w) are connected to the sound source and are independent of distance. Sound pressure levels vary substantially with distance from the source and diminish because of intervening obstacles and barriers, air absorption, wind, and other factors. Sound power is the acoustical energy emitted by the sound source and is an absolute value that is not affected by the environment.

The operational noise level calculations provided in this noise study account for the distance attenuation provided due to geometric spreading, when sound from a localized stationary source (i.e., a point source) propagates uniformly outward in a spherical pattern. A default ground attenuation factor of 0.5 was used in the CadnaA noise analysis to account for mixed ground



[&]quot;Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

² Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings. Sound power levels calculated using the CadnaA noise model at the reference distance to the noise source. Numbers may vary due to size differences between point and area noise sources.

representing a combination of hard and soft surfaces. Appendix 9.1 includes the detailed noise model inputs used to estimate the Project operational noise levels presented in this section.

9.4 Project Operational Noise Levels

Using the reference noise levels to represent the proposed Project operations that include tractor trailer parking activity, and truck movements, Urban Crossroads, Inc. calculated the operational source noise levels that are expected to be generated at the Project site and the Project-related noise level increases that would be experienced at each of the sensitive receiver locations. Table 9-2 shows the Project operational noise levels during the daytime hours of 7:00 a.m. to 10:00 p.m. The daytime hourly noise levels at the off-site receiver locations are expected to range from 34.5 to 47.8 dBA Leq.

TABLE 9-2: DAYTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Serves	Opera	Operational Noise Levels by Receiver Location (dBA Leq)							
Noise Source ¹	R1	R2	R3	R4	R5	R6			
Tractor Trailer Parking Activity	42.0	47.6	45.0	34.3	37.9	39.1			
Truck Movements	28.7	34.1	31.3	21.4	25.2	26.8			
Total (All Noise Sources)	42.2	47.8	45.2	34.5	38.1	39.3			

¹ See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

Table 9-3 shows the Project operational noise levels during the nighttime hours of $10:00 \, \text{p.m.}$ to $7:00 \, \text{a.m.}$ The nighttime hourly noise levels at the off-site receiver locations are expected to range from $34.5 \, \text{to} \, 47.8 \, \text{dBA L}_{\text{eq}}$. The minor differences between the daytime and nighttime noise levels are largely related to the estimated duration of noise activity as outlined in Table 9-1 and Appendix 9.1.

TABLE 9-3: NIGHTTIME PROJECT OPERATIONAL NOISE LEVELS

Noise Source ¹	Opera	Operational Noise Levels by Receiver Location (dBA Leq)							
Noise Source ¹	R1	R2	R3	R4	R5	R6			
Tractor Trailer Parking Activity	42.0	47.6	45.0	34.3	37.9	39.1			
Truck Movements	28.7	34.1	31.3	21.4	25.2	26.8			
Total (All Noise Sources)	42.2	47.8	45.2	34.5	38.1	39.3			

¹ See Exhibit 9-A for the noise source locations. CadnaA noise model calculations are included in Appendix 9.1.

9.5 Project Operational Noise Level Compliance

To demonstrate compliance with local noise regulations, the Project-only operational noise levels are evaluated against the exterior noise level thresholds adjusted to reflect the ambient noise levels at the nearest noise-sensitive receiver locations. Table 9-4 shows the operational noise levels associated with Nisqualli Road Trailer Lot Expansion Project will not exceed the daytime



and nighttime exterior noise level standards. Therefore, the operational noise impacts are considered *less than significant* at the nearby noise-sensitive receiver locations.

TABLE 9-4: OPERATIONAL NOISE LEVEL COMPLIANCE

Receiver Location ¹	_	perational s (dBA Leq) ²		l Standards Leq)³	Noise Level Standards Exceeded? ⁴	
Location	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	42.2	42.2	65	55	No	No
R2	47.8	47.8	65	55	No	No
R3	45.2	45.2	65	55	No	No
R4	34.5	34.5	65	55	No	No
R5	38.1	38.1	65	55	No	No
R6	39.3	39.3	65	55	No	No

¹ See Exhibit 8-A for the receiver locations.

9.6 Project Operational Noise Level Increases

To describe the Project operational noise level increases, the Project operational noise levels are combined with the existing ambient noise levels measurements for the nearby receiver locations that may be potentially impacted by Project operational noise sources. Since the units used to measure noise, decibels (dB), are logarithmic units, the Project-operational and existing ambient noise levels cannot be combined using standard arithmetic equations. (2) Instead, they must be logarithmically added using the following base equation:

$$SPL_{Total} = 10log_{10}[10^{SPL1/10} + 10^{SPL2/10} + ... 10^{SPLn/10}]$$

where "SPL1," "SPL2," etc. are equal to the sound pressure levels being combined, or in this case, the Project-operational and existing ambient noise levels. The difference between the combined Project and ambient noise levels describes the Project noise level increases to the existing ambient noise environment. Noise levels that would be experienced at receiver locations when Project-source noise is added to the daytime and nighttime ambient conditions are presented on Tables 9-5 and 9-6, respectively. As indicated on Table 9-5, the Project will generate a daytime operational noise level increase ranging from 0.0 to 0.4 dBA L_{eq} at the nearest receiver locations. Table 9-6 shows that the Project will generate a nighttime operational noise level increase ranging from 0.0 to 0.9 dBA L_{eq} at the nearest receiver locations. Project-related operational noise level increases would not exceed the operational noise level increase significance criteria presented in Table 4-1. Therefore, Project related operational noise level increases at the sensitive receiver locations will be *less than significant*.



² Proposed Project unmitigated operational noise levels as shown on Tables 9-2 and 9-3.

³ Exterior noise level standards, as shown on Table 4-1.

⁴ Do the estimated Project operational noise source activities exceed the noise level standards?

[&]quot;Daytime" = 7:00 a.m. - 10:00 p.m.; "Nighttime" = 10:00 p.m. - 7:00 a.m.

TABLE 9-5: DAYTIME PROJECT OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	42.2	L1	60.2	60.3	0.1	5.0	No
R2	47.8	L2	60.1	60.3	0.2	5.0	No
R3	45.2	L3	55.1	55.5	0.4	5.0	No
R4	34.5	L4	56.6	56.6	0.0	5.0	No
R5	38.1	L5	55.2	55.3	0.1	5.0	No
R6	39.3	L6	58.4	58.5	0.1	5.0	No

¹ See Exhibit 8-A for the receiver locations.

TABLE 9-6: NIGHTTIME OPERATIONAL NOISE LEVEL INCREASES

Receiver Location ¹	Total Project Operational Noise Level ²	Measurement Location ³	Reference Ambient Noise Levels ⁴	Combined Project and Ambient ⁵	Project Increase ⁶	Increase Criteria ⁷	Increase Criteria Exceeded?
R1	42.2	L1	62.6	62.6	0.0	5.0	No
R2	47.8	L2	54.3	55.2	0.9	5.0	No
R3	45.2	L3	51.9	52.7	0.8	5.0	No
R4	34.5	L4	54.2	54.2	0.0	5.0	No
R5	38.1	L5	52.7	52.8	0.1	5.0	No
R6	39.3	L6	54.3	54.4	0.1	5.0	No

¹ See Exhibit 8-A for the receiver locations.



² Total Project daytime operational noise levels as shown on Table 9-2.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

⁴ Observed daytime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance increase criteria as shown on Table 4-1.

² Total Project nighttime operational noise levels as shown on Table 9-3.

³ Reference noise level measurement locations as shown on Exhibit 5-A.

 $^{^{\}rm 4}$ Observed nighttime ambient noise levels as shown on Table 5-1.

⁵ Represents the combined ambient conditions plus the Project activities.

⁶ The noise level increase expected with the addition of the proposed Project activities.

⁷ Significance increase criteria as shown on Table 4-1.

10 CONSTRUCTION IMPACTS

This section analyzes potential impacts resulting from the short-term construction activities associated with the development of the Project. Exhibit 10-A shows the construction noise source locations in relation to the nearest sensitive receiver locations previously described in Section 8.

Section 13.01.060.9 of the City of Victorville Municipal Code, provided in Appendix 3.1, indicates that construction activity is considered exempt from the noise level standards on private properties that are determined by the director of building and safety to be essential to the completion of a project. However, neither the City of Victorville General Plan or Municipal Code establish numeric maximum acceptable construction source noise levels at potentially affected receivers for CEQA analysis purposes, a numerical construction threshold based on Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual is used for analysis of daytime construction impacts. The FTA considers a daytime exterior construction noise level of 80 dBA Leq as a reasonable threshold for noise sensitive residential land use with a nighttime exterior construction noise level of 70 dBA Leq (8 p. 179).

10.1 Construction Noise Levels

The FTA *Transit Noise and Vibration Impact Assessment Manual* recognizes that construction projects are accomplished in several different stages and outlines the procedures for assessing noise impacts during construction. Each stage has a specific equipment mix, depending on the work to be completed during that stage. As a result of the equipment mix, each stage has its own noise characteristics; some stages have higher continuous noise levels than others, and some have higher impact noise levels than others. The Project construction activities are expected to occur in the following stages:

- Site Preparation
- Grading
- Building Construction
- Paving
- Architectural Coating

10.2 Construction Reference Noise Levels

To describe construction noise activities, this construction noise analysis was prepared using reference construction equipment noise levels from the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels. (22) The RCNM equipment database, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.



OM. OTTAWAST OTTAWA NO र अमें किया है। MUTRO WAY WWW.ST 823 1,190 NISQUALU RD R4 **LEGEND:**

EXHIBIT 10-A: CONSTRUCTION NOISE SOURCE AND RECEIVER LOCATIONS



Construction Activity • Receiver Locations • Distance from receiver to Project site boundary (in feet)

TABLE 10-1: CONSTRUCTION REFERENCE NOISE LEVELS

Construction Stage	Reference Construction Equipmnet ¹	Reference Noise Level @ 50 Feet (dBA L _{eq})	Composite Reference Noise Level (dBA L _{eq}) ²	Reference Power Level (dBA L _w) ³	
C'I	Tractor	80			
Site Preparation	Backhoe	74	84.0	115.6	
rreparation	Grader	81			
	Scraper	80		114.9	
Grading	Excavator	77	83.3		
	Dozer	78			
D 11 11	Crane	73		112.2	
Building Construction	Generator	78	80.6		
Construction	Front End Loader	75			
	Paver	74		109.5	
Paving	Dump Truck	72	77.8		
	Roller	73			
Architectural Coating	Man Lift 68				
	Compressor (air)	74	76.2	107.8	
	Generator (<25kVA)	70			

¹ FHWA Road Construction Noise Model.

10.3 CONSTRUCTION NOISE ANALYSIS

Using the reference construction equipment noise levels and the CadnaA noise prediction model, calculations of the Project construction noise level impacts at the nearby sensitive receiver locations were completed. Consistent with FTA guidance for general construction noise assessment, Table 10-1 presents the combined noise levels for the loudest construction equipment, assuming all equipment operates at the same time. To account for the dynamic nature of construction activities, the Project construction noise analysis models the equipment as multiple moving points within the construction area (Project site boundary). Construction impacts are based on the highest noise level calculated at each receiver location. As shown on Table 10-2, the maximum construction noise levels are expected to range from 40.7 to 53.7 dBA Leq at the nearby receiver locations. Appendix 10.1 includes the detailed CadnaA construction noise model inputs.



² Represents the combined noise level for all equipment assuming they operate at the same time consistent with FTA Transit Noise and Vibration Impact Assessment guidance.

³ Sound power level represents the total amount of acoustical energy (noise level) produced by a sound source independent of distance or surroundings.

TABLE 10-2: CONSTRUCTION EQUIPMENT NOISE LEVEL SUMMARY

		Co	Construction Noise Levels (dBA L _{eq})						
Receiver Location ¹	Site Preparation	Grading	Building Construction	Paving	Architectural Coating	Highest Levels ²			
R1	48.2	47.5	44.8	42.1	40.4	48.2			
R2	53.7	53.0	50.3	47.6	45.9	53.7			
R3	50.8	50.1	47.4	44.7	43.0	50.8			
R4	40.7	40.0	37.3	34.6	32.9	40.7			
R5	44.4	43.7	41.0	38.3	36.6	44.4			
R6	45.8	45.1	42.4	39.7	38.0	45.8			

¹Construction noise source and receiver locations are shown on Exhibit 10-A.

10.4 CONSTRUCTION NOISE LEVEL COMPLIANCE

To evaluate whether the Project would generate potentially significant short-term noise levels at the nearest receiver locations, a construction-related daytime noise level threshold of 80 dBA L_{eq} is used as a reasonable threshold to assess the daytime construction noise level impacts. The construction noise analysis shows that the nearest receiver locations will not exceed the reasonable daytime 80 dBA L_{eq} significance threshold during Project construction activities as shown on Table 10-3. Therefore, the noise impacts due to Project construction noise are considered *less than significant* at all receiver locations.

TABLE 10-3: CONSTRUCTION NOISE LEVEL COMPLIANCE

	Construction Noise Levels (dBA L _{eq})						
Receiver Location ¹	Highest Construction Noise Levels ²	Threshold ³	Threshold Exceeded? ⁴				
R1	48.2	80	No				
R2	53.7	80	No				
R3	50.8	80	No				
R4	40.7	80	No				
R5	44.4	80	No				
R6	45.8	80	No				

¹Construction noise source and receiver locations are shown on Exhibit 10-A.



² Construction noise level calculations based on distance from the construction activity, which is measured from the Project site boundary to the nearest receiver locations. CadnaA construction noise model inputs are included in Appendix 10.1.

² Highest construction noise level calculations based on distance from the construction noise source activity to the nearest receiver locations as shown on Table 10-2.

³ Construction noise level thresholds as shown on Table 4-1.

⁴ Do the estimated Project construction noise levels exceed the construction noise level threshold?

10.5 CONSTRUCTION VIBRATION ANALYSIS

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Ground vibration levels associated with various types of construction equipment are summarized on Table 10-4. Based on the representative vibration levels presented for various construction equipment types, it is possible to estimate the potential Project construction vibration levels using the following vibration assessment methods defined by Caltrans. To calculate the vibration of equipment at distance Caltrans provides the following equation: PPV_{equip} = PPV_{ref} x (25/D)^{1.1}

TABLE 10-4: VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec) at 25 feet
Small bulldozer	0.003
Jackhammer	0.035
Loaded Trucks	0.076
Large bulldozer	0.089
Vibratory Roller	0.210

Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual

Using the vibration source level of construction equipment provided on Table 10-4 and the construction vibration assessment methodology published by the FTA, it is possible to estimate the Project vibration impacts. Table 10-5 presents the expected Project related vibration levels at the nearby receiver locations. At distances ranging from 823 to 3,070 feet from Project construction activities, construction vibration velocity levels are estimated to be less than 0.00 PPV (in/sec). Based on maximum acceptable continuous vibration threshold of 0.30 PPV (in/sec), the typical Project construction vibration levels will fall below the thresholds at all the sensitive receiver locations. Therefore, the Project-related vibration impacts are considered *less than significant* during typical construction activities at the Project site.



TABLE 10-5: PROJECT CONSTRUCTION VIBRATION LEVELS

	Distance to	Typical Construction Vibration Levels PPV (in/sec) ³						Thresholds	Thresholds
Receiver ¹	Const. Activity (Feet) ²	Small bulldozer	Jackhammer	Loaded Trucks	Large bulldozer	Vibratory Roller	Highest Vibration Level	PPV (in/sec) ⁴	Exceeded? ⁵
R1	1,518'	0.00	0.00	0.00	0.00	0.00	0.00	0.30	No
R2	823'	0.00	0.00	0.00	0.00	0.00	0.00	0.30	No
R3	1,163'	0.00	0.00	0.00	0.00	0.00	0.00	0.30	No
R4	3,070'	0.00	0.00	0.00	0.00	0.00	0.00	0.30	No
R5	1,712'	0.00	0.00	0.00	0.00	0.00	0.00	0.30	No
R6	1,190'	0.00	0.00	0.00	0.00	0.00	0.00	0.30	No

¹Construction noise source and receiver locations are shown on Exhibit 10-A.



 $^{^{\}rm 2}$ Distance from receiver location to Project construction boundary (Project site boundary).

³ Based on the Vibration Source Levels of Construction Equipment (Table 10-4).

⁴ Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19, p. 38.

⁵ Does the peak vibration exceed the acceptable vibration thresholds?

[&]quot;PPV" = Peak Particle Velocity

11 REFERENCES

- 1. **State of California.** *California Environmental Quality Act, Appendix G.* 2018.
- 2. California Department of Transportation Environmental Program. *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol.* Sacramento, CA: s.n., September 2013.
- 3. Environmental Protection Agency Office of Noise Abatement and Control. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974. EPA/ONAC 550/9/74-004.
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- 5. **U.S. Department of Transportation Federal Highway Administration.** *Highway Noise Barrier Design Handbook.* 2001.
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- 7. U.S. Environmental Protection Agency Office of Noise Abatement and Control. Noise Effects Handbook-A Desk Reference to Health and Welfare Effects of Noise. October 1979 (revised July 1981). EPA 550/9/82/106.
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- 9. **California Department of Transportation.** *Transportation and Construction Vibration Guidance Manual.* April 2020.
- 10. Office of Planning and Research. State of California General Plan Guidelines. 2019.
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- 12. —. Municipal Code, Section 13.01.030.
- 13. **County of San Bernardino.** *Southern California Logistics Airport Comprehensive Land Use Plan.* September 2008.
- 14. California Court of Appeal. *Gray v. County of Madera, F053661.* 167 Cal.App.4th 1099; Cal.Rptr.3d, October 2008.
- 15. **Federal Interagency Committee on Noise.** *Federal Agency Review of Selected Airport Noise Analysis Issues.* August 1992.
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- 20. **California Department of Transportation.** *Traffic Noise Attenuation as a Function of Ground and Vegetation Final Report.* June 1995. FHWA/CA/TL-95/23.



- 21. **Urban Crossroads, Inc.** *Nisqualli Road Trailer Lot Expansion Traffic Analysis.* November 2023.
- 22. U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning. FHWA Roadway Construction Noise Model. January, 2006.



12 CERTIFICATION

The contents of this noise study report represent an accurate depiction of the noise environment and impacts associated with the proposed Nisqualli Road Trailer Lot Expansion Project. The information contained in this noise study report is based on the best available data at the time of preparation. If you have any questions, please contact me directly at (949) 584-3148.

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EDUCATION

Master of Science in Civil and Environmental Engineering California Polytechnic State University, San Luis Obispo • December, 1993

Bachelor of Science in City and Regional Planning California Polytechnic State University, San Luis Obispo • June, 1992

PROFESSIONAL REGISTRATIONS

PE – Registered Professional Traffic Engineer – TR 2537 • January, 2009 AICP – American Institute of Certified Planners – 013011 • June, 1997–January 1, 2012 PTP – Professional Transportation Planner • May, 2007 – May, 2013 INCE – Institute of Noise Control Engineering • March, 2004

PROFESSIONAL AFFILIATIONS

ASA – Acoustical Society of America ITE – Institute of Transportation Engineers

PROFESSIONAL CERTIFICATIONS

Certified Acoustical Consultant – County of San Diego • March, 2018
Certified Acoustical Consultant – County of Orange • February, 2011
FHWA-NHI-142051 Highway Traffic Noise Certificate of Training • February, 2013



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APPENDIX 3.1:

CITY OF VICTORVILLE MUNICIPAL CODE



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Chapter 13.01 - NOISE CONTROL

Sections:

13.01.010 - Purpose and intent.

- (a) The purpose of this chapter is to establish criteria and standards for the regulation of noise levels within the city of Victorville.
- (b) The city council declares and finds that excessive noise levels are detrimental to the public health, welfare and safety and contrary to the public interest. It is the intent of this chapter to protect persons from excessive levels of noise from sources including, but not limited to; persons, animals, or fowl; automobiles, motorcycles, engines, machines, or other mechanical devices; loudspeakers, musical instruments, radios, televisions, phonographs, or other amplifying devices.
- (c) This chapter includes standards for the measurement of noise levels to ensure that noise levels do not disturb and interfere with the peace, comfort or repose of the residents of the neighborhood from which the noise is emitted.

(Ord. 1962 § 2 (part), 2002)

13.01.020 - Definitions.

The following words, phrases, and terms as used in this chapter shall have the following meanings:

- (1) "A-weighted sound level" means the sound pressure level in decibels as measured on a sound level meter using A-weighting network. The level to read is designated db(A) or dB(A).
- (2) "Ambient noise level" means the all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding any intrusive noise.
- (3) "Cumulative period" means an additive period of time composed of individual time segments which may be continuous or interrupted.
- (4) "Decibel" means a unit of measure of sound level noise.
- (5) "Noise level" means the same as "sound level" and the terms may be used interchangeably herein.
- (6) "Sound level" (noise level) in decibels is the quantity measured using the frequency weighting of A of a sound level meter as defined herein.
- (7) "Sound level meter" means an instrument meeting American National Standard Institute's Standard S1.4-1971 for type 1 or type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

(Ord. 1962 § 2 (part), 2002)

13.01.030 - Noise measurement criteria.

Any noise level measurements made pursuant to the provisions of this chapter shall be performed using a sound level meter as defined in this chapter. The location selected for measuring exterior noise levels shall be at any point on the property line of the offender or anywhere on the affected property.

(Ord. 1962 § 2 (part), 2002)

13.01.040 - Base ambient noise levels.

All ambient noise measurements shall commence in decibels within the respective zones and times as follows:

Zone	Time	Sound Level Decibels
All residential zones	10:00pm to 7:00am	55 dB(A)
	7:00am to 10:00pm	65 dB(A)
All commercial zones	Anytime	70 dB(A)
All industrial zones	Anytime	75 dB(A)

If the ambient noise level exceeds the applicable limit as noted in the above table, the ambient noise level shall be the standard.

(Ord. 1962 § 2 (part), 2002)

13.01.050 - Noise levels prohibited.

Noise levels shall not exceed the ambient noise levels in <u>Section 13.01.040</u> by the following dB(A) levels for the cumulative period of time specified:

- (1) Less than 5dB(A) for a cumulative period of more than thirty minutes in any hour;
- (2) Less than 10 dB(A) for a cumulative period of more than fifteen minutes in any hour;
- (3) Less than 15 dB(A) for a cumulative period of more than five minutes in any hour;
- (4) Less than 20 dB(A) for a cumulative period of more than one minute in any hour;
- (5) 20 dB(A) or more for any period of time.

(Ord. 1962 § 2 (part), 2002)

13.01.060 - Noise source exemptions.

The following activities shall be exempted from the provisions of this chapter:

(1) All mechanical devices, apparatus or equipment used, related to or connected with emergency

machinery, vehicle or work.

- (2) The provisions of this regulation shall not preclude the construction, operation, maintenance and repairs of equipment, apparatus or facilities of park and recreation projects, public works projects or essential public works services and facilities, including those utilities subject to the regulatory jurisdiction of the California Public Utilities Commission.
- (3) Activities conducted on the grounds of any elementary, intermediate or secondary school or college.
- (4) Outdoor gatherings, public dances and shows, provided said events are conducted pursuant to a permit as required by this code.
- (5) Activities conducted in public parks and public playgrounds, provided said events are conducted pursuant to a permit as required by this code.
- (6) Any activity to the extent regulation thereof has been preempted by state or federal law.
- (7) Traffic on any roadway or railroad right-of-way.
- (8) The operation of the Southern California Logistics Airport.
- (9) Construction activity on private properties that are determined by the director of building and safety to be essential to the completion of a project.

(Ord. 1962 § 2 (part), 2002)

13.01.070 - Notice and penalties.

Any person violating any of the provisions, or failing to comply with the requirements of this chapter, is guilty of a civil penalty, punishable in accordance with <u>Chapter 1.05</u>. In addition, in the discretion of the city attorney and based upon the specific facts and circumstances presented to him or her, any such violation may be charged as an infraction subject to the penalties contained in Section 1.04.010.

(Ord. 1962 § 2 (part), 2002)

13.01.080 - Severability.

If any provision of the ordinance codified in this chapter or the application thereof to any person or circumstance is held invalid, the remainder of the ordinance, and the application of such provision to other persons or circumstances, shall not be affected thereby.

(Ord. 1962 § 2 (part), 2002)

APPENDIX 5.1:

STUDY AREA PHOTOS



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JN:15241



15241_L1_H 1.North 34, 29' 36.670000"117, 16' 52.640000"



15241_L1_H 3.East 34, 29' 36.460000"117, 16' 52.580000"



15241_L1_H 2.South 34, 29' 36.610000"117, 16' 52.610000"



15241_L1_H 4.West 34, 29' 36.490000"117, 16' 52.580000"



15241_L2_J 1.North 34, 29' 20.670000"117, 16' 42.910000"



15241_L2_J 3.East 34, 29' 20.660000"117, 16' 42.910000"



15241_L2_J 2.South 34, 29' 20.670000"117, 16' 42.910000"



15241_L2_J 4.West 34, 29' 20.710000"117, 16' 42.970000"



15241_L3_O 1.North 34, 29' 9.060000"117, 16' 43.270000"



15241_L3_O 3.East 34, 29' 9.040000"117, 16' 43.270000"



15241_L3_O 2.South 34, 29' 9.040000"117, 16' 43.270000"



15241_L3_O 4.West 34, 29' 8.870000"117, 16' 43.330000"



15241_L4_P 1.North 34, 28' 47.630000"117, 17' 30.680000"



15241_L4_P 3.East 34, 28' 47.520000"117, 17' 30.650000"



15241_L4_P 2.South 34, 28' 47.500000"117, 17' 30.680000"



15241_L4_P 4.West 34, 28' 47.560000"117, 17' 30.680000"



15241_L5_S 1.North 34, 29' 2.990000"117, 17' 29.660000"



15241_L5_S 3.East 34, 29' 2.800000"117, 17' 29.500000"



15241_L5_S 2.South 34, 29' 2.940000"117, 17' 29.550000"



15241_L5_S 4.West 34, 29' 2.790000"117, 17' 29.520000"



15241_L6_Z 1.North 34, 29' 16.150000"117, 17' 30.290000"



15241_L6_Z 3.East 34, 29' 16.110000"117, 17' 30.290000"



15241_L6_Z 2.South 34, 29' 16.080000"117, 17' 30.290000"



15241_L6_Z 4.West 34, 29' 15.990000"117, 17' 30.400000"

APPENDIX 5.2:

NOISE LEVEL MEASUREMENT WORKSHEETS



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24-Hour Noise Level Measurement Summary Date: Thursday, May 18, 2023 Location: L1 - Located northeast of the site near the residence at 17540 Meter: Piccolo II JN: 15241 Project: Nisqualli Road Source: Benton Way Analyst: Z. Ibrahim Hourly L eq dBA Readings (unadjusted) (**qBy**) 80.0 75.0 70.0 65.0 60.0 Hourly 155.0 55.0 45.0 40.0 63. 83 63 62. 62 59. 6 59. 58. 57. 22 49. 40.0 35.0 0 2 3 4 6 7 8 9 10 18 19 20 21 22 23 1 5 11 12 13 14 15 16 17 **Hour Beginning** Timeframe L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. L ea Hour L_{ea} L max L min L eq Adj. 57.8 62.4 53.7 62.3 62.2 61.6 61.2 56.7 54.3 54.1 54.0 57.8 10.0 67.8 0 58.8 10.0 1 62.4 67.0 56.6 66.8 66.7 66.5 66.2 63.8 60.7 57.5 57.0 56.7 62.4 72.4 2 61.2 65.9 65.6 62.9 59.1 53.4 52.9 61.2 10.0 71.2 66.6 52.8 66.5 66.3 53.9 Night 3 54.4 54.1 60.2 10.0 70.2 60.2 65.3 54.0 65.1 65.0 64.6 64.2 62.1 58.0 55.2 4 63.9 69.1 56.4 68.9 68.6 68.1 67.8 65.8 62.0 57.3 56.9 56.6 63.9 10.0 73.9 5 54.7 64.7 54.9 62.9 10.0 72.9 62.9 67.9 67.8 67.6 67.3 67.1 61.4 55.9 55.3 69.7 58.5 58.3 58.0 64.4 10.0 74.4 6 64.4 70.4 57.8 70.2 70.0 69.2 65.5 61.4 69.0 56.5 68.7 68.6 68.2 60.7 57.3 56.9 56.6 63.3 0.0 63.3 63.3 67.8 64.9 8 59.6 65.2 57.3 53.5 53.1 59.6 0.0 59.6 65.4 53.0 65.1 64.7 64.1 60.7 53.8 9 57.1 63.5 49.3 63.3 63.1 62.4 61.7 58.0 54.7 51.1 50.6 49.6 57.1 0.0 57.1 10 60.2 65.7 65.4 65.0 53.1 52.4 51.9 60.2 0.0 60.2 66.0 51.8 65.8 61.5 58.3 11 49.2 55.3 40.6 55.0 54.9 54.5 53.7 49.9 46.9 42.4 41.4 40.7 49.2 0.0 49.2 12 47.6 52.0 43.5 50.9 50.2 49.9 48.7 47.5 43.8 43.6 47.6 0.0 47.6 51.5 44.2 13 55.3 61.6 50.2 60.9 60.5 60.0 59.3 56.2 53.5 51.0 50.5 50.3 55.3 0.0 55.3 Dav 14 58.3 64.3 48.3 64.1 64.0 63.5 63.0 59.5 55.8 50.7 49.4 48.6 58.3 0.0 58.3 15 67.0 66.3 60.0 53.5 52.7 62.0 62.0 68.0 52.5 67.9 67.6 63.7 54.2 0.0 62.0 16 63.5 70.1 55.1 69.9 69.7 69.1 68.4 64.9 60.7 56.5 55.9 55.3 63.5 0.0 63.5 17 58.7 54.4 58.7 58.7 64.0 54.1 63.8 63.4 62.8 62.1 59.3 57.5 55.4 55.0 0.0 18 57.3 62.7 48.4 62.5 62.4 61.9 61.7 59.1 55.9 49.4 49.0 48.6 57.3 0.0 57.3 19 52.1 62.5 67.5 62.5 68.3 52.0 68.0 67.7 67.3 67.1 64.9 59.4 52.9 52.4 5.0 20 63.5 68.7 57.5 68.4 68.2 67.6 67.2 65.0 62.0 58.2 57.9 57.6 63.5 5.0 68.5 21 53.3 59.4 59.4 64.2 53.1 64.1 63.9 63.5 63.0 61.4 58.0 53.8 53.5 5.0 64.4 22 54.1 10.0 61.1 66.5 53.4 66.3 66.2 65.8 65.4 62.7 59.1 54.5 53.6 61.1 71.1 Night 23 65.0 70.3 57.1 70.0 69.8 69.5 69.2 66.7 62.7 57.9 57.6 57.2 65.0 10.0 75.0 Leg (dBA) **Timeframe** Hour L_{eq} L max L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% 24-Hour 51.5 49.9 42.4 Daytime Nighttime Min 47.6 52.0 40.6 50.9 50.2 48.7 46.9 41.4 40.7 **CNEL** Dav Max 63.5 70.1 57.5 69.9 69.7 69.1 68.4 65.0 62.0 58.2 57.9 57.6 (7am-10pm) (10pm-7am) **Energy Average** 60.2 Average 63.9 63.7 63.2 62.7 59.8 56.5 52.3 51.7 51.2 60.2 62.6 69.0 57.8 62.4 62.3 62.2 61.6 61.2 58.8 56.7 53.9 53.4 52.9 Min 52.8 Night 58.0 65.0 70.4 57.8 70.2 70.0 69.7 69.2 66.7 62.7 58.5 58.3 Max



66.2

63.7

60.1

56.1

55.7

55.3

Average

67.1

66.9

66.6

62.6

24-Hour Noise Level Measurement Summary Date: Thursday, May 18, 2023 Location: L2 - Located east of the site near the residence at 13104 High Meter: Piccolo II JN: 15241 Project: Nisqualli Road Source: Crest St. Analyst: Z. Ibrahim Hourly L eq dBA Readings (unadjusted) (**qBy**) 80.0 75.0 70.0 65.0 60.0 Hourly 155.0 55.0 45.0 40.0 62 8 52.7 52.9 56. 56. 49. 8. 53 40.0 35.0 0 2 3 7 8 9 18 19 20 22 23 1 4 5 6 10 11 12 13 14 15 16 17 21 **Hour Beginning** Timeframe L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. L ea Hour L_{ea} L max L min L eq Adj. 61.8 51.8 57.0 48.8 56.8 56.4 55.6 54.6 50.9 49.3 49.1 48.8 51.8 10.0 0 52.3 49.7 1 52.7 56.7 49.4 56.3 56.0 55.3 55.0 53.7 52.3 50.0 49.4 52.7 10.0 62.7 2 53.1 56.1 55.8 54.0 52.3 49.7 49.3 53.1 10.0 63.1 57.6 49.2 57.4 57.0 50.2 Night 3 54.7 54.3 49.0 51.8 10.0 61.8 51.8 56.1 48.9 55.8 55.5 52.6 51.1 49.5 49.3 4 55.4 61.9 50.8 61.6 61.3 60.4 59.2 55.8 53.9 51.5 51.3 50.9 55.4 10.0 65.4 5 58.9 58.3 51.8 55.6 10.0 55.6 60.5 51.7 60.3 59.9 56.6 54.8 52.4 52.1 65.6 59.3 58.8 56.5 55.2 52.5 52.2 55.9 10.0 65.9 6 55.9 60.5 52.0 60.2 59.9 52.9 56.5 51.3 60.9 60.2 57.4 54.8 52.3 52.0 51.4 56.5 0.0 56.5 62.8 62.3 61.9 47.8 8 53.2 59.6 59.1 58.6 57.7 57.1 47.3 46.7 53.2 0.0 53.2 46.6 54.7 51.3 9 49.0 55.2 42.3 54.8 54.4 53.2 52.5 50.0 47.9 44.1 43.4 42.6 49.0 0.0 49.0 10 60.9 44.1 60.5 59.8 58.0 56.2 47.7 44.9 44.6 44.2 51.4 0.0 51.4 51.2 51.4 11 51.7 62.4 39.9 61.5 60.7 59.7 57.7 50.0 46.4 41.6 41.0 40.1 51.7 0.0 51.7 12 48.0 55.0 40.0 52.8 52.1 49.4 45.7 40.7 40.2 48.0 0.0 48.0 54.5 54.2 41.2 13 52.7 61.3 44.3 60.6 59.8 58.2 57.0 53.3 50.5 46.0 45.2 44.5 52.7 0.0 52.7 Dav 14 60.0 69.6 47.8 68.8 68.0 66.4 65.1 60.4 56.2 50.3 49.2 48.1 60.0 0.0 60.0 15 70.6 69.5 52.7 51.3 64.4 73.4 50.8 72.7 72.0 65.1 61.0 53.9 64.4 0.0 64.4 16 66.3 75.9 52.0 75.2 74.6 72.8 71.5 66.5 62.3 55.3 53.9 52.3 66.3 0.0 66.3 17 51.3 64.8 74.4 50.9 73.7 72.9 71.1 69.9 65.2 60.7 53.7 52.6 64.8 0.0 64.8 18 62.8 72.1 48.7 71.5 70.8 68.8 67.4 63.5 59.1 51.9 50.5 49.0 62.8 0.0 62.8 19 47.9 55.6 55.6 63.3 47.7 62.8 62.3 60.7 59.5 56.4 53.7 49.2 48.6 5.0 60.6 20 56.4 62.8 50.8 62.4 61.8 60.7 59.7 57.1 55.1 52.0 51.5 51.0 56.4 5.0 61.4 21 48.6 52.8 57.8 52.8 58.5 48.5 58.0 57.6 56.4 55.6 53.5 52.0 49.3 48.9 5.0 22 10.0 52.9 58.4 48.7 57.8 57.4 56.1 55.4 53.6 52.0 50.0 49.6 48.9 52.9 62.9 Night 23 56.3 61.2 50.7 60.8 60.6 60.1 59.7 57.7 54.9 52.1 51.4 50.8 56.3 10.0 66.3 Leg (dBA) **Timeframe** Hour L_{eq} L max L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% 24-Hour 54.5 52.1 45.7 Daytime Nighttime Min 48.0 55.0 39.9 54.2 52.8 49.4 41.2 40.7 40.1 **CNEL** Dav Max 66.3 75.9 52.0 75.2 74.6 72.8 71.5 66.5 62.3 55.3 53.9 52.3 (7am-10pm) (10pm-7am) **Energy Average** 60.1 Average 63.9 63.3 61.9 60.7 56.9 53.6 48.9 48.1 47.3 62.4 60.1 54.3 51.8 56.1 55.8 55.5 54.7 54.3 52.3 50.9 49.3 49.1 48.8 Min 48.7 Night 56.3 61.9 52.0 61.6 61.3 60.4 59.7 57.7 55.2 52.9 52.5 52.2 Max



56.8

54.7

53.1

50.9

50.5

50.1

Average

58.6

58.2

57.4

54.3

24-Hour Noise Level Measurement Summary Date: Thursday, May 18, 2023 Location: L3 - Located southeast of the site near the residence at 12922 Meter: Piccolo II JN: 15241 Project: Nisqualli Road Source: High Vista St. Analyst: Z. Ibrahim Hourly L eq dBA Readings (unadjusted) (**qBy**) 80.0 75.0 70.0 65.0 60.0 Hourly 155.0 55.0 45.0 40.0 9 59 59 53.0 49.0 50.6 56. 56. 54. 50. 50. 48 53 40.0 35.0 0 2 3 7 8 9 20 22 23 1 5 6 10 11 12 13 14 15 16 17 18 19 21 **Hour Beginning** Timeframe L1% L2% L5% L8% L25% L50% L90% L95% L99% L_{eq} Adj. L ea Hour L_{ea} L max L min Adj. 60.3 50.3 56.6 45.4 56.1 55.5 54.1 53.2 50.5 49.4 47.5 46.8 45.8 50.3 10.0 0 10.0 1 49.0 54.2 44.6 53.8 53.4 52.7 52.2 50.0 47.9 45.2 45.0 44.7 49.0 59.0 2 56.7 55.9 54.8 53.9 49.1 46.0 45.4 50.6 10.0 60.6 50.6 45.2 56.3 51.5 46.4 Night 3 43.3 48.1 10.0 58.1 48.1 56.0 43.3 55.6 55.1 53.1 51.7 48.1 46.4 44.1 43.8 4 52.3 60.2 47.0 59.8 59.3 57.9 56.5 52.3 50.4 47.9 47.5 47.1 52.3 10.0 62.3 5 48.0 56.8 48.5 48.2 53.3 10.0 63.3 53.3 61.4 61.0 60.5 58.4 53.3 51.4 48.9 54.9 60.8 59.0 54 5 49.6 49.3 54.9 10.0 64.9 6 63.4 49.2 63.0 62.4 52.6 50.0 56.3 49.3 62.7 60.6 55.4 52.9 50.1 49.7 49.4 56.3 0.0 56.3 66.2 65.8 65.2 8 53.3 44.2 59.5 58.4 49.7 45.4 44.9 44.4 53.3 53.3 62.6 61.9 61.2 53.6 0.0 9 50.8 61.4 39.5 61.0 60.2 58.3 56.2 49.5 45.7 41.0 40.3 39.7 50.8 0.0 50.8 10 50.3 60.6 59.8 57.6 55.6 48.7 45.1 40.4 39.8 39.1 50.3 0.0 50.3 61.1 38.9 11 53.0 66.1 36.2 65.1 63.9 61.2 58.7 48.3 43.4 37.8 36.9 36.4 53.0 0.0 53.0 12 48.7 57.6 55.1 53.6 48.9 45.8 38.7 37.8 37.1 48.7 0.0 48.7 58.2 36.8 56.9 13 51.9 62.4 40.9 61.9 61.2 59.2 57.4 51.2 46.7 42.3 41.7 41.1 51.9 0.0 51.9 Dav 14 54.0 64.6 44.7 64.1 63.6 61.6 58.3 52.4 49.7 46.0 45.4 44.9 54.0 0.0 54.0 15 58.4 48.7 48.0 54.6 63.4 47.9 62.7 61.9 60.0 54.9 52.4 49.3 54.6 0.0 54.6 16 59.9 71.6 49.8 70.7 69.6 66.5 64.4 58.7 55.5 51.2 50.7 50.0 59.9 0.0 59.9 17 59.4 65.9 53.7 49.0 59.4 59.4 71.8 48.8 71.6 70.5 64.6 56.3 50.2 49.6 0.0 18 55.2 64.9 46.0 64.1 63.3 61.5 59.9 55.5 51.5 47.5 46.8 46.2 55.2 0.0 55.2 19 56.3 66.3 46.4 65.8 65.1 62.4 61.1 56.0 52.7 47.8 47.1 46.6 56.3 5.0 61.3 20 54.0 63.0 48.0 62.5 61.9 60.0 58.0 53.5 51.7 49.1 48.6 48.2 54.0 5.0 59.0 21 59.3 46.1 51.2 60.2 46.0 58.4 56.2 54.7 51.3 49.4 46.9 46.5 51.2 5.0 56.2 22 10.0 50.9 58.3 45.5 57.7 56.8 55.3 54.3 51.5 49.5 46.4 45.9 45.6 50.9 60.9 Night 23 53.0 59.8 47.7 59.3 58.7 57.0 56.0 53.7 51.7 48.9 48.3 47.9 53.0 10.0 63.0 Leg (dBA) **Timeframe** Hour L_{eq} L max L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% 24-Hour Daytime 57.6 53.6 43.4 Nighttime Min 48.7 58.2 36.2 56.9 55.1 48.3 37.8 36.9 36.4 **CNEL** Dav Max 59.9 71.8 49.8 71.6 70.5 66.5 64.6 58.7 55.5 51.2 50.7 50.0 (7am-10pm) (10pm-7am) **Energy Average** 55.1 Average 63.7 62.8 60.5 58.7 52.9 49.7 45.6 45.0 44.4 55.1 51.7 59.3 51.9 48.1 54.2 53.8 53.4 52.7 48.1 46.4 44.1 43.8 43.3 Min 43.3



59.0

54.8

54.5

51.7

52.6

49.8

50.0

47.3

49.6

46.8

49.3

46.4

63.4

Average

49.2

63.0

58.1

62.4

57.5

60.8

56.0

54.9

51.9

Max

Night

24-Hour Noise Level Measurement Summary Date: Thursday, May 18, 2023 Location: L4 - Located southwest of the site near the residence at 17047 Meter: Piccolo II JN: 15241 Project: Nisqualli Road Source: Torino Dr. Analyst: Z. Ibrahim Hourly L eq dBA Readings (unadjusted) (**qBy**) 80.0 75.0 70.0 65.0 60.0 Hourly 155.0 55.0 45.0 40.0 56.4 58. 59. 49.5 57. 56. 56. 56. 57. 53. 40.0 35.0 0 2 3 7 8 9 19 20 22 23 1 4 5 6 10 11 12 13 14 15 16 17 18 21 **Hour Beginning** Timeframe L1% L2% L5% L8% L25% L50% L90% L95% L99% L_{eq} Adj. L ea Hour L_{eq} L max L min Adj. 44.4 44.0 62.7 52.7 61.5 43.5 60.9 59.3 58.2 48.4 43.6 52.7 10.0 0 61.3 53.2 54.9 10.0 1 49.5 58.0 43.7 57.6 56.8 53.6 49.8 46.8 44.4 44.1 43.8 49.5 59.5 2 55.7 54.0 52.7 49.1 44.0 43.6 48.8 10.0 58.8 48.8 56.6 43.5 56.2 46.8 44.3 Night 54.2 53.0 44.2 49.2 10.0 59.2 3 49.2 56.4 44.1 56.1 55.6 49.5 47.2 44.9 44.5 4 54.1 61.8 47.6 61.5 61.1 60.0 58.2 54.2 52.0 48.9 48.2 47.7 54.1 10.0 64.1 5 60.5 50.1 49.7 56.4 10.0 66.4 56.4 65.1 49.6 64.7 64.2 62.4 56.1 54.0 50.6 62.9 58.1 52.9 58.0 10.0 6 58.0 65.6 52.8 65.2 64.7 61.6 56.4 53.9 53.4 68.0 57.5 52.0 64.9 61.3 57.4 55.5 53.1 52.6 52.1 57.5 0.0 66.0 65.5 62.9 57.5 8 56.9 65.0 62.0 60.7 57.0 50.6 56.9 0.0 56.9 65.7 50.5 64.0 54.9 51.9 51.3 9 53.2 61.7 48.1 60.6 59.8 57.5 56.2 53.3 51.7 49.3 48.8 48.3 53.2 0.0 53.2 47.5 10 58.5 46.3 58.0 57.5 56.2 54.6 50.0 47.0 46.4 51.4 0.0 51.4 51.7 51.4 11 52.7 60.8 47.1 60.2 59.7 58.2 56.3 52.7 50.8 48.4 47.9 47.3 52.7 0.0 52.7 12 48.1 59.9 58.9 49.3 48.8 48.3 54.4 0.0 54.4 54.4 62.9 62.0 61.3 54.4 51.9 13 53.8 59.9 50.0 59.5 59.0 57.6 56.7 54.3 52.8 50.9 50.6 50.2 53.8 0.0 53.8 Dav 14 56.7 64.9 51.0 64.2 63.6 62.0 60.5 56.9 54.8 52.1 51.6 51.2 56.7 0.0 56.7 15 62.4 53.5 53.0 58.8 67.2 52.9 66.4 65.7 63.6 59.1 57.1 54.2 58.8 0.0 58.8 16 59.8 68.1 53.4 67.3 66.6 64.8 63.7 60.3 57.8 54.7 54.1 53.5 59.8 0.0 59.8 17 65.9 62.9 53.4 58.4 53.3 65.3 64.5 61.8 59.0 56.8 54.2 53.8 58.4 0.0 58.4 18 56.7 64.9 51.3 64.1 63.1 61.1 59.8 57.1 55.3 52.5 52.0 51.4 56.7 0.0 56.7 19 53.7 57.6 57.6 64.3 53.7 63.9 63.3 62.0 61.2 57.9 56.1 54.2 53.9 5.0 62.6 20 56.4 63.7 51.2 63.2 62.5 60.7 59.6 56.8 55.1 52.4 51.8 51.3 56.4 5.0 61.4 21 50.8 55.7 60.7 55.7 62.6 50.7 62.2 61.8 60.0 58.8 56.2 54.5 51.8 51.4 5.0 22 50.3 10.0 54.9 63.1 49.7 62.6 62.1 59.9 58.2 55.0 53.2 50.7 49.8 54.9 64.9 Night 23 54.6 62.5 48.6 62.1 61.7 60.4 58.7 54.9 52.3 49.5 49.0 48.6 54.6 10.0 64.6 Leg (dBA) **Timeframe** Hour L_{eq} L max L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% 24-Hour Daytime 58.0 54.6 50.0 Nighttime Min 51.4 58.5 46.3 57.5 56.2 51.7 47.5 47.0 46.4 **CNEL** Dav Max 59.8 68.1 53.7 67.3 66.6 64.8 63.7 60.3 57.8 54.7 54.1 53.7 (7am-10pm) (10pm-7am) **Energy Average** 56.6 Average 63.2 62.5 60.8 59.5 56.3 54.3 51.8 51.3 50.8 61.4 56.6 54.2 48.8 56.4 56.1 55.6 54.0 52.7 49.1 46.8 44.3 44.0 43.6 Min 43.5 Night 58.0 65.6 52.8 65.2 64.7 62.9 61.6 58.1 56.4 53.9 53.4 52.9 Max



57.2

53.3

50.8

47.9

47.5

47.1

Average

60.8

60.3

58.7

54.2

24-Hour Noise Level Measurement Summary Date: Thursday, May 18, 2023 Location: L5 - Located southwest of the site near the residence at 17066 Meter: Piccolo II JN: 15241 Project: Nisqualli Road Source: Monaco Dr. Analyst: Z. Ibrahim Hourly L eq dBA Readings (unadjusted) (**qBy**) 80.0 75.0 70.0 65.0 Hourly 155.0 55.0 45.0 40.0 56.2 58. 9 52.6 49.9 27 49.1 57. 56. 56. 53. 53. 40.0 35.0 0 2 3 7 8 9 19 20 22 23 1 5 6 10 11 12 13 14 15 16 17 18 21 **Hour Beginning** Timeframe L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. L ea Hour L_{ea} L max L min L eq Adj. 43.4 60.6 50.6 59.0 43.1 58.5 58.2 57.2 56.3 49.3 43.7 43.2 50.6 10.0 0 46.2 10.0 1 49.1 56.6 43.7 56.1 55.6 54.1 53.1 49.8 46.8 44.3 44.1 43.9 49.1 59.1 2 59.5 58.8 56.3 52.9 44.2 43.8 50.0 10.0 60.0 50.0 60.4 43.6 49.4 47.2 44.6 Night 3 49.5 48.8 44.4 46.8 10.0 56.8 46.8 50.9 44.3 50.6 50.4 47.4 46.3 44.9 44.7 4 49.9 56.2 46.4 55.8 55.4 54.1 52.8 50.3 48.8 47.1 46.8 46.5 49.9 10.0 59.9 5 48.7 58.2 57.6 49.8 49.0 54.5 10.0 64.5 54.5 60.5 59.7 59.2 55.8 53.1 50.5 62.8 62.2 59.8 52.9 58.8 10.0 68.8 6 58.8 65.6 51.4 64.5 63.9 57.6 53.8 51.9 57.0 50.1 61.7 60.9 58.2 55.2 51.7 51.1 50.4 57.0 64.2 63.2 62.7 0.0 57.0 8 65.0 48.1 47.3 46.8 56.2 56.2 46.5 64.6 64.3 63.1 62.1 55.6 51.3 56.2 0.0 9 58.9 69.0 44.8 68.5 68.2 66.1 64.7 59.1 49.9 46.3 45.7 45.1 58.9 0.0 58.9 58.8 10 52.1 43.7 58.0 57.2 48.5 44.5 43.9 52.1 0.0 52.1 59.8 59.1 52.9 45.0 11 50.8 58.6 44.2 58.2 57.7 56.6 55.5 51.2 48.0 45.2 44.9 44.4 50.8 0.0 50.8 12 50.3 43.7 58.1 57.8 56.9 55.5 50.0 47.2 44.3 43.9 50.3 0.0 50.3 58.4 44.7 13 57.8 69.3 49.2 68.5 67.7 65.8 64.3 54.0 51.8 50.0 49.7 49.4 57.8 0.0 57.8 54.6 Dav 14 63.8 46.9 63.2 62.5 61.3 60.3 52.9 50.2 47.8 47.5 47.1 54.6 0.0 54.6 15 58.2 57.1 49.1 48.7 53.3 60.6 48.5 60.1 59.6 53.7 51.5 49.4 53.3 0.0 53.3 16 56.6 66.4 49.6 66.1 65.7 63.2 61.1 55.5 53.0 50.5 50.2 49.8 56.6 0.0 56.6 17 59.9 48.8 54.1 61.9 48.7 61.6 61.2 58.3 53.9 51.7 49.6 49.2 54.1 0.0 54.1 18 52.8 60.0 47.8 59.6 59.2 58.0 56.6 53.0 50.8 48.6 48.3 47.9 52.8 0.0 52.8 19 53.6 46.5 61.5 61.2 60.3 58.8 53.3 50.3 47.2 46.9 46.6 53.6 5.0 58.6 61.8 20 52.6 60.0 48.2 59.5 59.0 57.8 56.6 52.6 50.6 48.9 48.6 48.3 52.6 5.0 57.6 21 50.0 47.8 56.1 67.0 47.7 66.3 64.4 61.7 53.8 48.4 48.1 56.1 5.0 61.1 22 10.0 49.9 55.5 46.7 55.1 54.7 53.6 52.7 50.1 48.9 47.5 47.2 46.9 49.9 59.9 Night 23 50.4 57.1 45.6 56.6 56.0 54.8 54.0 51.2 48.7 46.5 46.1 45.7 50.4 10.0 60.4 Leg (dBA) **Timeframe** Hour L_{eq} L max L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% 24-Hour Daytime 58.1 55.5 44.7 43.9 Nighttime Min 50.3 58.4 43.7 57.7 56.6 50.0 47.2 44.3 **CNEL** Dav Max 58.9 69.3 50.1 68.5 68.2 66.1 64.7 59.1 55.2 51.7 51.1 50.4 (7am-10pm) (10pm-7am) **Energy Average** 55.2 Average 62.5 62.1 60.7 59.4 54.0 50.7 48.1 47.7 47.3 55.2 52.7 59.9 46.8 50.9 50.6 50.4 49.5 48.8 47.4 46.2 43.7 43.4 43.2 Min 43.1



62.2

54.5

59.8

51.5

57.6

49.3

53.8

47.0

52.9

46.6

51.9

46.1

65.6

Average

51.4

64.5

57.4

63.9

56.9

62.8

55.6

58.8

52.7

Max

Night

24-Hour Noise Level Measurement Summary Date: Thursday, May 18, 2023 Location: L6 - Located west of the site near the retail building at 13010 Meter: Piccolo II JN: 15241 Project: Nisqualli Road Source: Hesperia Rd. Analyst: Z. Ibrahim Hourly L eq dBA Readings (unadjusted) (**qBy**) 80.0 75.0 70.0 65.0 60.0 Hourly 155.0 55.0 45.0 40.0 ιū 61 56.4 29. 28. œ 54.9 57. 57. 56. 55 40.0 35.0 0 2 3 6 7 8 9 10 18 19 20 21 22 23 1 4 5 11 12 13 14 15 16 17 **Hour Beginning** Timeframe L1% L2% L5% L8% L25% L50% L90% L95% L99% Adj. L ea Hour L_{eq} L max L min L eq Adj. 44.8 45.2 44.9 61.9 51.9 60.2 59.8 59.2 57.8 56.8 45.4 51.9 10.0 0 52.3 48.2 10.0 1 51.5 61.7 45.0 60.9 59.7 56.8 55.4 51.5 48.4 45.8 45.5 45.1 51.5 61.5 2 49.5 43.5 54.8 53.8 50.1 44.1 43.9 43.6 49.5 10.0 59.5 57.9 57.4 56.6 46.6 Night 3 56.8 55.5 45.3 51.0 10.0 61.0 51.0 59.4 45.3 59.0 58.4 51.2 47.9 45.8 45.6 4 54.8 63.0 47.1 62.5 61.8 60.1 59.2 55.6 52.0 48.1 47.6 47.3 54.8 10.0 64.8 5 49.2 62.0 54.9 49.8 49.4 57.5 10.0 67.5 57.5 65.9 65.4 64.6 63.2 58.2 50.4 62.5 59.0 56.3 58.1 10.0 6 58.1 66.9 50.8 66.3 65.4 61.5 52.2 51.7 51.0 68.1 59.8 52.5 64.6 63.5 59.9 57.8 54.2 53.5 52.7 59.8 0.0 59.8 69.4 68.5 67.2 8 58.1 48.4 63.8 62.0 55.9 50.0 48.7 58.1 58.1 67.2 66.7 66.0 58.3 51.2 0.0 9 56.4 66.9 48.1 66.0 64.8 61.8 59.7 56.2 54.0 49.9 49.1 48.3 56.4 0.0 56.4 10 55.7 64.5 47.5 61.6 60.0 53.0 48.5 47.7 55.7 0.0 55.7 64.0 63.4 56.0 49.3 11 55.4 64.8 46.2 64.3 63.8 61.7 59.6 55.4 52.3 48.1 47.3 46.5 55.4 0.0 55.4 12 47.2 60.8 58.9 54.5 52.2 48.5 48.0 47.4 54.8 0.0 54.8 54.8 64.2 63.6 62.9 47.6 13 54.9 63.3 47.4 62.7 62.1 60.1 58.5 55.4 53.0 49.2 48.4 54.9 0.0 54.9 Dav 14 64.1 78.6 49.9 77.7 76.2 70.9 67.3 57.0 54.6 51.5 50.9 50.1 64.1 0.0 64.1 15 62.6 61.2 51.2 57.5 57.5 57.5 65.7 51.0 65.3 64.7 57.6 55.7 52.6 51.9 0.0 16 61.6 71.5 51.9 70.9 70.3 68.9 66.9 60.8 57.3 53.7 53.0 52.2 61.6 0.0 61.6 17 58.7 65.9 52.0 58.7 58.7 51.8 65.4 64.7 63.1 62.1 59.4 57.6 53.6 52.9 0.0 18 57.6 65.0 49.5 64.5 63.9 62.2 61.2 58.6 56.3 51.5 50.6 49.7 57.6 0.0 57.6 19 47.3 55.4 62.4 47.1 61.0 59.6 58.9 56.7 54.3 49.0 48.1 55.4 5.0 60.4 61.8 20 56.8 65.8 48.2 65.4 64.6 62.5 61.3 57.3 54.2 49.7 49.0 48.3 56.8 5.0 61.8 21 47.6 55.4 60.4 55.4 64.6 47.4 64.0 62.8 60.5 59.2 56.0 53.2 48.9 48.2 5.0 22 10.0 53.8 61.6 46.1 61.0 60.2 58.8 57.9 54.8 51.5 47.3 46.7 46.3 53.8 63.8 Night 23 52.6 60.5 45.4 59.9 59.0 57.6 56.6 53.3 50.5 46.7 46.1 45.6 52.6 10.0 62.6 Leg (dBA) **Timeframe** Hour L_{eq} L max L_{min} L1% L2% L5% L8% L25% L50% L90% L95% L99% 24-Hour Daytime 58.5 Nighttime Min 54.8 62.4 46.2 61.8 61.0 59.6 54.5 52.2 48.1 47.3 46.5 **CNEL** Dav 52.7 Max 64.1 78.6 52.5 77.7 76.2 70.9 67.3 60.8 57.8 54.2 53.5 (7am-10pm) (10pm-7am) **Energy Average** 58.4 Average 66.0 65.2 63.0 61.3 57.3 54.7 50.7 50.0 49.1 58.4 61.9 54.3 49.5 57.9 57.4 56.6 54.8 53.8 50.1 46.6 44.1 43.9 43.6 Min 43.5 Night 58.1 66.9 50.8 66.3 65.4 63.2 62.0 59.0 56.3 52.2 51.7 51.0 Max



57.6

54.0

50.7

47.3

46.9

46.5

Average

61.3

60.5

58.7

54.3

APPENDIX 7.1:

OFF-SITE TRAFFIC NOISE CALCULATIONS



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	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
Scena	rio: E ne: Hesperia R						t Name: lumber:		ılli Trailer L	.ot	
	ne: nespena k ent: n/o Ottawa					JOD N	iumber:	15241			
	SPECIFIC IN	IPUT DATA			0				L INPUT	S	
Highway Data					Site Con	aitions	(Hara				
Average Daily	. ,	35,091 vehicle	es					Autos:			
	r Percentage:	7.00%				edium Tr		,			
	Hour Volume:	2,456 vehicles	S		He	eavy Tru	cks (3+	Axles):	15		
	ehicle Speed:	50 mph			Vehicle i	Mix					
Near/Far La	ane Distance:	72 feet			Veh	icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Ra	arrier Height:	0.0 feet			М	edium T	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-V		0.0				Heavy T	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline D	ist. to Barrier:	62.0 feet		T T	Noise So	ource E	levatio	ns (in fe	eet)		
Centerline Dist.	to Observer:	62.0 feet		Ī		Auto		0.000			
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck	s: 2	297			
Observer Height	(Above Pad):	5.0 feet			Heav	vv Truck	s: E	3.004	Grade Ad	iustment	: 0.0
F	Pad Elevation:	0.0 feet		L		,					
Ro	ad Elevation:	0.0 feet			Lane Eq				feet)		
	Road Grade:	0.0%				Auto		0.725			
	Left View:	-90.0 degree				m Truck		0.550			
	Right View:	90.0 degree	es		Heav	vy Truck	s: 50	0.567			
FHWA Noise Mod											
Vehicle Type	REMEL	Traffic Flow	Dis	stance		Road	Fres		Barrier Att		m Atten
Autos.				-0.2	-	-1.20		-4.70		000	0.000
Medium Trucks.				-0.1		-1.20		-4.88		000	0.000
Heavy Trucks.				-0.1		-1.20		-5.32	0.0	000	0.000
Unmitigated Nois							A.C. 1.1	1			
VehicleType	Leq Peak Hou			Leq E	vening		Night		Ldn		NEL
Autos.			70.2		66.9		62		70.8	-	71.2
Medium Trucks.			59.9		51.1		52		60.9		61.0
Heavy Trucks. Vehicle Noise			67.4 72.3		60.6		60		68.7 73.1		68.9 73.5
	-				07.9	'	04	.0	/3.	1	13.5
Centerline Distan	ce to Noise Co	ontour (in feet)	1	70	dBA	65	dBA	-	60 dBA	55	dBA
			Ldn:	70	100	1 00	21	_	465		1.002
			VEL:		106		22		490		1,055
											,

FHWA-RD	0-77-108 HIGHWAY	/ NOISE I	PREDICTI	ION MOI	DEL (9/12/	2021)	
Scenario: OYC Road Name: Hesperia R Road Segment: n/o Ottawa					ame: Nisqu nber: 1524	ualli Trailer Lot 1	
SITE SPECIFIC IN	PUT DATA			NO	ISE MOD	EL INPUTS	
Highway Data		S	ite Condi	tions (H	ard = 10, S	Soft = 15)	
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	37,108 vehicles 7.00% 2,598 vehicles				Auto: s (2 Axles (3+ Axles): 15	
Vehicle Speed:	50 mph	V	ehicle Miz	_			
Near/Far Lane Distance:	72 feet	ř	Vehicle		Day	Evening N	light Daily
Site Data				Aut			9.6% 97.72%
Barrier Height:	0.0 feet		Med	lium Truc	ks: 84.6		12.6% 0.73%
Barrier Type (0-Wall, 1-Berm):	0.0		He	avy Truc	ks: 82.4	% 4.3%	13.3% 1.55%
Centerline Dist. to Barrier:	62.0 feet	N	loise Soul	rce Elev	ations (in	feet)	
Centerline Dist. to Observer:	62.0 feet			Autos:	0.000	,	
Barrier Distance to Observer:	0.0 feet		Medium	Trucks:	2.297		
Observer Height (Above Pad): Pad Elevation:	5.0 feet 0.0 feet		Heavy	Trucks:	8.004	Grade Adjus	stment: 0.0
Road Elevation:	0.0 feet	L	ane Equiv	valent D	istance (ir	feet)	
Road Grade:	0.0%			Autos:	50.725		
Left View:	-90.0 degrees		Medium	Trucks:	50.550		
Right View:	90.0 degrees		Heavy	Trucks:	50.567		
FHWA Noise Model Calculations	s						
VehicleType REMEL	Traffic Flow D	istance	Finite R	oad	Fresnel	Barrier Atten	Berm Atten
Autos: 70.20	1.75	-0.20		-1.20	-4.70		
Medium Trucks: 81.00	-19.51	-0.17		-1.20	-4.88		
Heavy Trucks: 85.38	-16.24	-0.18		-1.20	-5.32	2 0.00	0.000
Unmitigated Noise Levels (with							
VehicleType Leq Peak Hou		Leq Ev	-	Leq Ni		Ldn	CNEL
Autos: 70			67.1		62.4	71.0	71.5
Medium Trucks: 60			51.4 60.9		53.1	61.2	61.3
Heavy Trucks: 67 Vehicle Noise: 72			68.1		61.0	68.9 73.4	69.1 73.7
			00.1		00.1	75.4	75.7
Centerline Distance to Noise Co	intour (in feet)	70 d	BA	65 dB	A	60 dBA	55 dBA
				30	1		
	Ldn:		104		224	483	1,040

	FHWA-RI	D-77-108 HIGH	(AWI	NOISE	PREDIC	TION MC	DDEL (9/12/2	021)		
Scenario: Road Name: Road Segment:	Hesperia R					Project N Job Nu			illi Trailer L	ot	
	PECIFIC IN	IPUT DATA			0'' 0				L INPUT	S	
Highway Data					Site Con	aitions (i					
Average Daily Tr	. ,	35,112 vehicl	es				-	Autos:	15		
Peak Hour Pe	-	7.00%				dium Truc		,			
	ır Volume:	2,458 vehicle	s		He	avy Truck	(S (3+ A	(xles	15		
	cle Speed:	50 mph			Vehicle I	/lix					
Near/Far Lane	Distance:	72 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						Au	ıtos:	80.9%	9.5%	9.6%	97.72
Barrie	er Height:	0.0 feet			Me	edium Tru	icks:	84.6%	2.8%	12.6%	0.73
Barrier Type (0-Wall	l, 1-Berm):	0.0			F	leavy Tru	icks:	82.4%	4.3%	13.3%	1.55
Centerline Dist.	to Barrier:	62.0 feet			Noise So	urca Fla	vation	: (in fa	not)		
Centerline Dist. to	Observer:	62.0 feet			140/36 00	Autos:		000	.01)		
Barrier Distance to	Observer:	0.0 feet			Mediur	n Trucks:		97			
Observer Height (Ab	ove Pad):	5.0 feet				v Trucks:		004	Grade Ad	iustment	0.0
Pad	Elevation:	0.0 feet				,					
	Elevation:	0.0 feet		Ŀ	Lane Equ				feet)		
	ad Grade:	0.0%				Autos:					
	Left View:	-90.0 degre				n Trucks:		550			
R	Right View:	90.0 degre	es		Heav	y Trucks:	50.	567			
FHWA Noise Model											
VehicleType	REMEL	Traffic Flow		istance	Finite		Fresn		Barrier Att		rm Atter
Autos:	70.20			-0.2	-	-1.20		-4.70		000	0.00
Medium Trucks:	81.00			-0.1		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38			-0.1		-1.20		-5.32	0.0	000	0.00
Unmitigated Noise L	•		$\overline{}$	-							
VehicleType Le	eq Peak Hou	ur Leq Da	y 70.2	_	vening 66.9	Leq N	ignt 62.1		Ldn 70.8	_	NEL 71
Medium Trucks:).S).9	59.9		51.1		52.9		60.9	-	61
Heavy Trucks:		7.5	67.4		60.6		60.8		68.7	-	68
Vehicle Noise:		2.4	72.3		67.9		64.8		73.1		73
Centerline Distance	to Naisa C	antaur (in fac	6)							•	
Centernine Distance	to Noise Ci	ontour (III ree	''	70	dBA	65 di	BA	6	60 dBA	55	dBA
			Ldn:		100		040		465		1.00
			Luii.		100		216		400		1,00

Wednesday, November 22, 2023

FHWA-R	D-77-108 HIGHW	AY NOIS	E PREDIC	TION M	ODEL (9/12/2	(021)		
Scenario: OYC+P Road Name: Hesperia F Road Segment: n/o Ottawa					Name: umber:		alli Trailer L	_ot	
SITE SPECIFIC II	NPUT DATA			N	IOISE	MODE	L INPUT	S	
Highway Data			Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt): Peak Hour Percentage:	37,129 vehicles 7.00%			dium Tr	ucks (2	/	: 15		
Peak Hour Volume:	2,599 vehicles		He	avy Tru	cks (3+	Axles)	: 15		
Vehicle Speed:	50 mph		Vehicle I	Mix					
Near/Far Lane Distance:	72 feet		Veh	icleType		Day	Evening	Night	Daily
Site Data					Autos:	80.99	6 9.5%	9.6	% 97.72%
Barrier Height:	0.0 feet		М	edium T	rucks:	84.69	6 2.8%	12.6	% 0.73%
Barrier Type (0-Wall, 1-Berm):	0.0		,	Heavy Ti	rucks:	82.49	6 4.3%	13.3	% 1.55%
Centerline Dist. to Barrier:	62.0 feet		Noise So	ource El	evation	s (in f	eet)		
Centerline Dist. to Observer:	62.0 feet			Auto.	s: 0.	000			
Barrier Distance to Observer:	0.0 feet		Mediu	m Truck	s: 2	297			
Observer Height (Above Pad):	5.0 feet		Heav	y Truck	s: 8	004	Grade Ad	justme	nt: 0.0
Pad Elevation:	0.0 feet			•					
Road Elevation:	0.0 feet		Lane Eq				feet)		
Road Grade:	0.0%			Auto.		725			
Left View:	-90.0 degrees			m Truck	00	.550			
Right View:	90.0 degrees		Heav	y Truck	s: 50	.567			
FHWA Noise Model Calculation	ıs								
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresi	nel	Barrier Att	en B	erm Atten
Autos: 70.20	1.75	-0.	20	-1.20		-4.70		000	0.000
Medium Trucks: 81.00	-19.51	-0.	17	-1.20		-4.88	0.	000	0.000
Heavy Trucks: 85.38		-0.		-1.20		-5.32	0.	000	0.000
Unmitigated Noise Levels (with								1	
VehicleType Leq Peak Ho			Evening	,	Night		Ldn		CNEL
	0.6 70		67.1		62.		71.	-	71.5
	0.1 60		51.4		53.		61.	_	61.3
	7.8 67.		60.9		61.	-	68.	-	69.1
	2.6 72	.5	68.1		65.	1	73.	4	73.7
Centerline Distance to Noise C	ontour (in feet)	70) dBA	65	dBA		60 dBA		i5 dBA
	Ld		104	1 30	224		483		1.040
	CNE		110		236		509		1,096

lay, November 22, 2023 Wednesday, 1

	FHWA-RI	D-77-108 HIGH	IWAY	NOISE	PREDIC	TION N	IODEL (9/12/2	021)		
	io: HY ne: Hesperia R nt: n/o Ottawa						Name: lumber:		alli Trailer L	.ot	
	SPECIFIC IN	IPUT DATA			0				L INPUT	s	
Highway Data					Site Con	aitions	•				
Average Daily	Traffic (Adt):	44,091 vehicl	es					Autos:			
Peak Hour	Percentage:	7.00%					ucks (2 i	,			
Peak H	lour Volume:	3,086 vehicle	S		He	avy Tru	cks (3+ ,	4xles):	15		
Ve	hicle Speed:	50 mph		l l	Vehicle i	Mix					
Near/Far La	ne Distance:	72 feet		ŀ	Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Ra	rrier Height:	0.0 feet			М	edium T	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-W		0.0			1	Heavy T	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Di	st. to Barrier:	62.0 feet		-	Noise So	ource F	evation	s (in fe	oet)		
Centerline Dist.	to Observer:	62.0 feet		ŀ	710700 01	Auto		000	,,,,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck		297			
Observer Height	(Above Pad):	5.0 feet				vy Truck		004	Grade Ad	iustmen	t· 0.0
Pi	ad Elevation:	0.0 feet		L							
Ro	ad Elevation:	0.0 feet		L	Lane Eq	uivalen	Distan	ce (in :	feet)		
	Road Grade:	0.0%				Auto		725			
	Left View:	-90.0 degre	es			m Truck		550			
	Right View:	90.0 degre	es		Heav	y Truck	s: 50.	567			
FHWA Noise Mode	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresi	_	Barrier Att	en Be	rm Atten
Autos:	70.20	2.50		-0.2	20	-1.20		-4.70	0.0	000	0.000
Medium Trucks:				-0.1		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-15.49		-0.1	18	-1.20		-5.32	0.0	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barri	er atter	nuation)						
VehicleType	Leq Peak Hou	ur Leq Da	/	Leq E	vening	Leq	Night		Ldn	C	NEL
Autos:	71	1.3	71.1		67.9		63.	1	71.8	В	72.2
Medium Trucks:).9	60.9		52.1		53.	-	61.9	-	62.0
Heavy Trucks:		3.5	68.4		61.6		61.		69.		69.9
Vehicle Noise:	73	3.4	73.3		68.9		65.	3	74.	1	74.5
Centerline Distan	ce to Noise Co	ontour (in feet)								
			Į	70	dBA	65	dBA	4 - 7	60 dBA		dBA
			Ldn:		117		251		542		1,167
		С	NEL:		123		265		570		1,229

	FHWA-RI	D-77-108 HIGH	YAW	NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
Scenario Road Name Road Segmen	e: Hesperia R						t Name: lumber:		lli Trailer L	ot	
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				S	ite Cor	nditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	34,819 vehicl	les					Autos:	15		
Peak Hour I	Percentage:	7.00%			Me	edium Ti	ucks (2	Axles):	15		
Peak Ho	our Volume:	2,437 vehicle	es		He	eavy Tru	cks (3+	Axles):	15		
Vel	nicle Speed:	50 mph		v	ehicle	Mix					
Near/Far Lar	ne Distance:	72 feet		F		icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Ran	rier Height:	0.0 feet			М	ledium 7	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy 7	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dis		62.0 feet		٨	loise S	ource E	levatio	ns (in fe	eet)		
Centerline Dist. t		62.0 feet				Auto	s: (0.000	,		
Barrier Distance t		0.0 feet			Mediu	m Truck		2.297			
Observer Height ()	Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet				•					
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen			feet)		
F	Road Grade:	0.0%				Auto).725			
	Left View:	-90.0 degre	es			m Truck	00	0.550			
	Right View:	90.0 degre	es		Hea	vy Truck	s: 50).567			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		m Atten
Autos:	70.20	1.47		-0.20		-1.20		-4.70		000	0.00
Medium Trucks:	81.00	-19.79		-0.17		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-16.52		-0.18		-1.20		-5.32	0.0	000	0.00
VehicleType	Levels (with Leg Peak Hou			e r atten ı Leq Ev			Night		Ldn		NEL
Autos:	Tey reak not		70.1	Ley Ev	66.8		Nigrit 62	1	70.7		71.
Medium Trucks:	59		59.9		51.1		52		60.9		61.
Heavy Trucks:	67		67.4		60.6		60		68.3		68.
Vehicle Noise:	72		72.2		67.8		64		73.		73.
Centerline Distanc	e to Noise Co	ontour (in fee	t)								
		,		70 d	BA	65	dBA	6	0 dBA	55	dBA
			Ldn:		100		21	5	463		997
			NEL:		105		22	_	487		1.050

						TION MC	•				
Scenario: HY+									lli Trailer L	.ot	
Road Name: Hes						Job Nu	mber: '	15241			
Road Segment: n/o	Ottawa :	SI.									
SITE SPECI Highway Data	FIC IN	PUT DATA			Sita Can	NC ditions (F			L INPUT	S	
	(A W)			-	site Com	uitions (i					
Average Daily Traffic	. ,	44,112 vehicle	S					Autos:	15		
Peak Hour Percer		7.00%				dium Truc			15		
Peak Hour Vo.		3,088 vehicles			He	avy Truck	S (3+ A	ixies):	15		
Vehicle S		50 mph		ī	Vehicle I	Лix					
Near/Far Lane Dist	ance:	72 feet			Vehi	cleType		Day	Evening	Night	Daily
Site Data						Αι	ıtos:	80.9%	9.5%	9.6%	97.72
Barrier He	eiaht:	0.0 feet			Me	edium Tru	cks:	84.6%	2.8%	12.6%	0.73
Barrier Type (0-Wall, 1-B		0.0			F	leavy Tru	cks:	82.4%	4.3%	13.3%	1.55
Centerline Dist. to B	,	62.0 feet		١,	Naina Ca	urce Ele	ration	in fe	net)		
Centerline Dist. to Obs	erver:	62.0 feet		- '	voise 30				el)		
Barrier Distance to Obs	erver:	0.0 feet			A decellors	Autos: n Trucks:		000 297			
Observer Height (Above	Pad):	5.0 feet				n Trucks: v Trucks:		297	Grade Ad	iuatmant	. 0 0
Pad Elev	ation:	0.0 feet			пеач	y Trucks.	0.0	JU4	Grade Adj	usuneni	. 0.0
Road Elev	ation:	0.0 feet		I	Lane Equ	uivalent L	Distanc	e (in f	feet)		
Road G	rade:	0.0%				Autos:	50.	725			
Left	View:	-90.0 degree	S		Mediur	n Trucks:	50.	550			
Right	View:	90.0 degree	S		Heav	y Trucks:	50.	567			
FHWA Noise Model Calc	ulations	;									
VehicleType REN	ΛEL	Traffic Flow	Dist	tance	Finite	Road	Fresn	el	Barrier Att	en Ber	m Atter
Autos:	70.20	2.50		-0.20	0	-1.20		-4.70	0.0	000	0.0
Medium Trucks:	81.00	-18.76		-0.1	7	-1.20		-4.88	0.0	000	0.0
Heavy Trucks:	85.38	-15.49		-0.18	8	-1.20		-5.32	0.0	000	0.0
Unmitigated Noise Level	s (witho	out Topo and I	arrie	r atten	uation)						
	eak Hou			Leg Ev		Leq N	•		Ldn		NEL
Autos:	71.	-	1.1		67.9		63.1		71.8	-	72
Medium Trucks:	60.		0.9		52.1		53.9		61.9	-	62
Heavy Trucks:	68.		8.4		61.6		61.8		69.7		69
Vehicle Noise:	73.	4 7	3.3		68.9		65.8		74.1	1	74
Centerline Distance to N	oise Co	ntour (in feet)		70	.s. I	05.0					
			L	70 c		65 dl		6	i0 dBA		dBA
		-	.dn:		117		251		542		1,16
		C:V	IEL:		123		265		571		1.22

Wednesday, November 22, 2023

FHWA	-RD-77	'-108 HIGHW	AY NOIS	SE PREDIC	CTION N	IODEL (9/12	2/2021)	
Scenario: E+P Road Name: Hesper Road Segment: s/o Otta					.,	Name: Niso lumber: 152	qualli Trailer Lo 41	ot
SITE SPECIFIC	INPU	T DATA			N	IOISE MO	DEL INPUTS	3
Highway Data				Site Cor	ditions	(Hard = 10,	Soft = 15)	
Average Daily Traffic (Ad Peak Hour Percentag Peak Hour Volum Vehicle Spee	e: 7. e: 2,4 d:	837 vehicles .00% .39 vehicles 50 mph			eavy Tru	Auto ucks (2 Axle cks (3+ Axle	s): 15	
Near/Far Lane Distanc	9.1	72 feet		Veh	icleType	Da	/ Evening	Night Daily
Site Data Barrier Heigh Barrier Type (0-Wall, 1-Bern		0.0 feet 0.0			ledium T Heavy T		9% 9.5% 6% 2.8%	9.6% 97.72% 12.6% 0.73% 13.3% 1.55%
Centerline Dist. to Barrie		0.0 32.0 feet						
Centerline Dist. to Observe Barrier Distance to Observe Observer Height (Above Pad Pad Elevatic Road Grad Left Vie Right Vie	r:): n: n: o: v: -9	62.0 feet 0.0 feet 5.0 feet 0.0 feet 0.0 feet 0.0 feet 0.0 degrees 0.0 degrees		Mediu Hea Lane Eq	Auto m Truck vy Truck	s: 2.297 s: 8.004 t Distance (s: 50.725 s: 50.550	Grade Adj in feet)	ustment: 0.0
VehicleType REMEL	Tra	affic Flow	Distance	Finite	Road	Fresnel	Barrier Atte	en Berm Atten
Medium Trucks: 81	.20 .00 .38	1.48 -19.79 -16.52	-0	1.20 1.17 1.18	-1.20 -1.20 -1.20	-4.8 -4.8 -5.3	38 0.0	0.000
Unmitigated Noise Levels (v	ithout	Topo and ba	arrier att	enuation)				
VehicleType Leq Peak		Leq Day		Evening		Night	Ldn	CNEL
Autos: Medium Trucks:	70.3 59.8	70 59	9.9	66.8 51.1		62.1 52.8	70.7 60.9	61.0
Heavy Trucks: Vehicle Noise:	67.5 72.4	67 72		60.6 67.9		60.7	68.7 73.1	
				07.8	'	04.0	73.1	73.4
Centerline Distance to Noise	Conto	our (in feet)	7	0 dBA	65	dBA	60 dBA	55 dBA
		Lo	in:	100		215	463	997
		CNE	L:	105		226	487	1,050

ednesday, November 22, 2023

FHW	\-RD-	77-108 HIGH	WAY	NOISE	PREDIC	CTION N	MODEL	(9/12/2	021)		
Scenario: OYC Road Name: Hesper Road Segment: s/o Otta		i.					t Name lumber		ılli Trailer I	_ot	
SITE SPECIFIC	INP	UT DATA			24- 0-				L INPUT	S	
Highway Data				2	site Coi	nditions	(Hara				
Average Daily Traffic (Ad	,	7,869 vehicle	es			- di T		Autos:			
Peak Hour Percentag Peak Hour Volum		7.00% .651 vehicle:				edium Ti eavy Tru		,			
Vehicle Spee		,051 venicies 50 mph	5	L	п	eavy IIu	CKS (ST	Axies).	15		
Near/Far Lane Distant		72 feet		١	/ehicle						
	G.	72 1661			Vel	nicleType		Day	Evening	Night	Daily
Site Data							Autos:	80.9%		9.6%	
Barrier Heigi	t:	0.0 feet				1edium 7		84.6%		12.6%	
Barrier Type (0-Wall, 1-Berr	1):	0.0				Heavy 1	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dist. to Barri	er:	62.0 feet		,	Voise S	ource E	levatio	ns (in fe	eet)		
Centerline Dist. to Observ	er:	62.0 feet		F		Auto		0.000	,		
Barrier Distance to Observ		0.0 feet			Mediu	ım Truck	(S: 2	2.297			
Observer Height (Above Pa	,	5.0 feet			Hea	vv Truck	(S: 8	3.004	Grade Ad	justment	0.0
Pad Elevation		0.0 feet		L.		·					
Road Elevation		0.0 feet		1	ane Eq	uivalen			feet)		
Road Grad		0.0%				Auto		0.725			
Left Vie		-90.0 degree				ım Truck		0.550			
Right Vie	N:	90.0 degree	es		Hea	vy Truck	(S. 51	0.567			
FHWA Noise Model Calcula					_						
VehicleType REMEL		raffic Flow	Dis	stance		Road	Fres		Barrier At		m Atten
	.20	1.84		-0.20	-	-1.20		-4.70		000	0.000
	.00	-19.42		-0.17		-1.20		-4.88		000	0.000
	.38	-16.15		-0.18		-1.20		-5.32	0.	000	0.000
VehicleType Leg Peak				er atten Leg Ev		100	Night		Ldn		NEL
Autos:	70.6	Leq Day	70.5	Ley E	67.2		rvigrit 62	-	71.		71.5
Medium Trucks:	60.2		60.2		51.4	-	53		61.		61.4
Heavy Trucks:	67.8		67.8		60.9		61		69.		69.2
Vehicle Noise:	72.7		72.6		68.2		65		73.	-	73.8
Centerline Distance to Nois	Con	tour (in feet)								
		,,		70 c	iBA	65	dBA	6	60 dBA	55	dBA
			Ldn:		105	•	22	7	489)	1,054
		CI	VEL:		111		23	9	515	5	1,110

	PHWA-KU	-77-108 HIGH	WAY	NOISE	PREDIC	HONN	NODEL	(9/12/2	021)		
Scenario: Road Name: Road Segment: :	Hesperia Ro							: Nisqua : 15241	alli Trailer L	ot	
	ECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	Site Con	ditions	(Hard	= 10, Sc	oft = 15)		
Average Daily Tra		44,798 vehicle	es					Autos:			
Peak Hour Per		7.00%				dium Tr		,			
Peak Hour		3,136 vehicle	S		He	avy Tru	icks (3+	Axles):	15		
	e Speed:	50 mph		ν	/ehicle l	Иiх					
Near/Far Lane	Distance:	72 feet			Veh	icleType	9	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Barrie	r Height:	0.0 feet			М	edium T	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-Wall,		0.0			-	Heavy T	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dist. t	o Barrier:	62.0 feet		^	loise So	ource E	levatio	ns (in f	eet)		
Centerline Dist. to 0		62.0 feet		F		Auto		0.000	,		
Barrier Distance to 0		0.0 feet			Mediu	m Truck		2.297			
Observer Height (Abo	,	5.0 feet			Heav	y Truck	(S: 8	3.004	Grade Adj	ustment	: 0.0
	levation:	0.0 feet					4 Di-4-	/:	£4\		
	levation:	0.0 feet			ane Eq	uivaien Auto		nce (III).725	reet)		
	d Grade: .eft View:	0.0%			Modiu	Auto m Truck		0.725			
-	.eπ view: ght View:	-90.0 degree				ry Truck		0.567			
FHWA Noise Model C	alculations	1									
	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	snel	Barrier Atte	en Bei	m Atten
Autos:	70.20	2.57		-0.20)	-1.20		-4.70	0.0	000	0.00
Medium Trucks:	81.00	-18.69		-0.17	7	-1.20		-4.88	0.0	000	0.00
Heavy Trucks:	85.38	-15.42		-0.18	3	-1.20		-5.32	0.0	000	0.00
Unmitigated Noise Le			barrie								
	q Peak Hou	- 7 - 7		Leq Ev		Leq	Night		Ldn		NEL
Autos:	71.		71.2		67.9		63	-	71.8		72.
Medium Trucks:	60.	-	61.0		52.2		53		62.0		62.
Heavy Trucks:	68.		68.5		61.7		61		69.8		69.
Vehicle Noise:	73.		73.3		68.9		65	.9	74.2	<u>′</u>	74.
Centerline Distance t	o Noise Co	ntour (in feet	,	70 d	ID A	65	dBA	_	50 dBA	55	dBA
			Ldn:	70 0	118	00	25		547	55	1.179

		D-77-108 HIGH		NOIDE	TILLDIC			•			
	o: OYC+P								ılli Trailer L	.ot	
	e: Hesperia F					Job ∧	lumber:	15241			
Road Segmen	it: s/o Ottawa	St.									
	SPECIFIC II	NPUT DATA			0'' 0				L INPUT	S	
Highway Data					Site Con	aitions	(Hara :				
Average Daily	Traffic (Adt):	37,887 vehicl	es					Autos:			
	Percentage:	7.00%				edium Tr	,	,			
	our Volume:	2,652 vehicle	es .		He	avy Tru	cks (3+	Axles):	15		
	hicle Speed:	50 mph		-	Vehicle	Mix					
Near/Far Lar	ne Distance:	72 feet		F	Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72
Bar	rier Height:	0.0 feet			М	edium T	rucks:	84.6%	2.8%	12.6%	0.739
Barrier Type (0-W	-	0.0				Heavy T	rucks:	82.4%	4.3%	13.3%	1.55
Centerline Dis	t. to Barrier:	62.0 feet		H	Noise S	ource F	evation	ns (in f	pet)		
Centerline Dist.	to Observer:	62.0 feet		· · · · · · · · · · · · · · · ·	10/30 00	Auto		0.000			
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck		297			
Observer Height (Above Pad):	5.0 feet				/y Truck		1.004	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet				•				Juotimom	0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivalen	t Distar	ice (in	feet)		
F	Road Grade:	0.0%				Auto).725			
	Left View:	-90.0 degre	es			m Truck		0.550			
	Right View:	90.0 degre	es		Heav	y Truck	s: 50).567			
FHWA Noise Mode	l Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	70.20			-0.2	-	-1.20		-4.70		000	0.00
Medium Trucks:	81.00			-0.1	•	-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-16.15	,	-0.1	8	-1.20		-5.32	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Ho		_	Leq E	vening		Night		Ldn		VEL
Autos:		0.6	70.5		67.2		62		71.		71
Medium Trucks:	•	0.2	60.2		51.4		53	-	61.3	-	61
Heavy Trucks:		7.8	67.8		60.9		61		69.	-	69
Vehicle Noise:	72	2.7	72.6		68.2		65	.1	73.	5	73
Centerline Distanc	e to Noise C	ontour (in fee	t)								
			L	70 (dBA	65	dBA		60 dBA		dBA
			Ldn:		105		22		489		1,05
		C	NEL:		111		23	9	516		1.11

Wednesday, November 22, 2023

	FHWA-RD	-77-108 HIGH	WAY	NOIS	PREDIC	TION MO	DDEL (9/12/2	021)		
Road Nam	o: HY+P e: Hesperia Ro nt: s/o Ottawa :					Project I Job Nu			ılli Trailer L	.ot	
	SPECIFIC IN	PUT DATA			a:: a				L INPUT	s	
Highway Data					Site Con	ditions (
Average Daily	. ,	44,816 vehicle	:S					Autos:	15		
Peak Hour	Percentage:	7.00%				dium Tru					
		3,137 vehicles	6		He	avy Truci	ks (3+ /	Axles):	15		
Ve	hicle Speed:	50 mph			Vehicle I	Mix					
Near/Far Lai	ne Distance:	72 feet				icleType		Day	Evening	Night	Daily
Site Data						A	utos:	80.9%	9.5%	9.6%	97.72%
Rai	rier Heiaht:	0.0 feet			Me	edium Tru	ıcks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-W		0.0			F	leavy Tru	ıcks:	82.4%	4.3%	13.3%	1.55%
Centerline Dis	. ,	62.0 feet			Noise Sc		4!	- /: #	41		
Centerline Dist.	to Observer:	62.0 feet			Noise Sc	Autos			eet)		
Barrier Distance	to Observer:	0.0 feet					. 0.	000			
Observer Height (Above Pad):	5.0 feet				m Trucks		297	Grade Ad	i votmont	. 0 0
Pa	d Elevation:	0.0 feet			Heav	y Trucks	. 8.	004	Grade Adj	justriient	0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivalent	Distan	ce (in	feet)		
F	Road Grade:	0.0%				Autos	50.	725			
	Left View:	-90.0 degree	s		Mediui	m Trucks	50.	550			
	Right View:	90.0 degree	s		Heav	y Trucks	50.	567			
FHWA Noise Mode	el Calculations	ì									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fresi	-	Barrier Att	en Ber	m Atten
Autos:	70.20	2.57		-0.2		-1.20		-4.70		000	0.000
Medium Trucks:	81.00	-18.69		-0.		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-15.42		-0.	18	-1.20		-5.32	0.0	000	0.000
Unmitigated Noise	Levels (witho	out Topo and	barri	er atte	nuation)						
VehicleType	Leq Peak Hou	r Leq Day		Leq E	vening	Leq N	light		Ldn	C	NEL
Autos:	71.		71.2		67.9		63.2		71.8	-	72.3
Medium Trucks:	60.	-	61.0		52.2		53.9	-	62.0	-	62.
Heavy Trucks:	68.	-	68.5		61.7		61.8		69.8		69.9
Vehicle Noise:	73.	5	73.3		68.9		65.9	9	74.2	2	74.
Centerline Distanc	e to Noise Co	ntour (in feet)								,	
				70	dBA	65 d		(0 dBA		dBA
			Ldn:		118		254		547		1,180
		CI	VEL:		124		268		577		1,242

Wednesday, November 22, 2023

	FHWA-RI	0-77-108 HIGH	WAY	NOISE	PREDIC	CTION N	IODEL	(9/12/20	021)		
Road Na	ario: E me: Hesperia R ent: s/o Nisqual							Nisqua 15241	lli Trailer L	_ot	
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data				٥	ite Cor	nditions	(Hara				
	y Traffic (Adt):	39,113 vehicle	es					Autos:	15		
Peak Hou	ır Percentage:	7.00%				edium Tr		,	15		
Peak	Hour Volume:	2,738 vehicles	3		He	eavy Tru	cks (3+	Axles):	15		
ν	'ehicle Speed:	50 mph		v	ehicle	Mix					
Near/Far L	ane Distance:	72 feet		-		icleType	,	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
R	arrier Height:	0.0 feet			М	ledium T	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-	Wall, 1-Berm):	0.0				Heavy T	rucks:	82.4%	4.3%	13.3%	1.55%
	Dist. to Barrier:	62.0 feet		٨	loise S	ource E	levatio	ns (in fe	et)		
Centerline Dist	t. to Observer:	62.0 feet				Auto		0.000	.,		
Barrier Distance	e to Observer:	0.0 feet			Mediu	m Truck		2.297			
Observer Height	t (Above Pad):	5.0 feet				vy Truck			Grade Ad	liustment	0.0
1	Pad Elevation:	0.0 feet				•				,	
R	oad Elevation:	0.0 feet		L	ane Eq	uivalen	t Distar	nce (in f	eet)		
	Road Grade:	0.0%				Auto	s: 50).725			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 50	0.550			
	Right View:	90.0 degree	es		Hea	vy Truck	s: 50).567			
FHWA Noise Mod	del Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	inel	Barrier Att	en Ber	m Atten
Autos	3: 70.20	1.98		-0.20)	-1.20		-4.70	0.0	000	0.000
Medium Trucks	81.00	-19.28		-0.17	,	-1.20		-4.88	0.0	000	0.000
Heavy Trucks		-16.01		-0.18		-1.20		-5.32	0.0	000	0.000
Unmitigated Nois											
VehicleType	Leq Peak Hou		_	Leq Ev			Night		Ldn		NEL
Autos			70.6		67.3		62		71.2	_	71.7
Medium Trucks			60.4		51.6		53		61.4		61.5
Heavy Trucks			67.9		61.1		61	_	69.2		69.3
Vehicle Noise	2: 72	.9	72.7		68.4		65	.3	73.0	6	73.9
Centerline Distar	nce to Noise Co	ontour (in feet))	70 d	DA.	67	dBA		0 dBA		dBA
			Ldn:	7U a		05					
			Lan: VEL:					1,077			
		CI	vEL:		113		24	4	527		1,135

Scenario: C								(9/12/2			
Road Name: H Road Segment: s	Hesperia Ro							: Nisqua : 15241	illi Trailer L	ot	
	ECIFIC IN	PUT DATA							L INPUT	S	
Highway Data Average Daily Traf		42,887 vehicle	es		Site Cor			Autos:	15		
Peak Hour Per Peak Hour	-	7.00% 3,002 vehicle	s					Axles): Axles):			
Vehicle Near/Far Lane D	e Speed: Distance:	50 mph 72 feet		1	Vehicle	Mix icleType	. 1	Dav	Evening	Night	Dailv
Site Data					****		Autos:	80.9%	-	9.6%	. ,
Barrier Barrier Type (0-Wall,	r Height: 1-Berm):	0.0 feet 0.0				edium 1 Heavy 1		84.6% 82.4%		12.6% 13.3%	
Centerline Dist. to		62.0 feet		I	Noise S	ource E	levatio	ns (in fe	eet)		
Barrier Distance to O Observer Height (Abo Pad E	Centerline Dist. to Observer: 62.0 feet Barrier Distance to Observer: 0.0 feet bbserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet						(s: 2	0.000 2.297 3.004	Grade Ad	iustment	: 0.0
Road Li	Elevation: d Grade: eft View: ght View:	0.0 feet 0.0% -90.0 degree 90.0 degree				Auto m Truck ry Truck	s: 50 (s: 50	0.725 0.550 0.567	leety		
FHWA Noise Model Ca											
	REMEL	Traffic Flow		stance		Road	Fre		Barrier Att		m Atten
Autos: Medium Trucks: Heavy Trucks:	70.20 81.00 85.38	2.38 -18.88 -15.61		-0.2 -0.1 -0.1	7	-1.20 -1.20 -1.20		-4.70 -4.88 -5.32	0.0	000 000 000	0.00 0.00 0.00
Unmitigated Noise Le	vels (with	out Topo and	barri	er atten	uation)						
VehicleType Leq	Peak Hou	r Leq Day	<i>y</i>	Leq E	vening	Leq	Night		Ldn		VEL
Autos:	71.		71.0		67.7		63		71.6	-	72.
Medium Trucks:	60 68		60.8		52.0 61.5		53 61		61.8 69.6		61.
Heavy Trucks: Vehicle Noise:	73		73.1		68.8		65		74.0		69. 74.
Centerline Distance to	o Noise Co	ntour (in feet)								
				70 0	dBA	65	dBA	6	60 dBA	55	dBA
			Ldn:		115		24		532		1,146
		C	NEL:		121		26	0	560		1,206

Scenario	o: E+P					Project	Name:	Nisqua	lli Trailer L	ot	
Road Name	e: Hesperia R	d.				Job N	umber:	15241			
Road Segmen	t: s/o Nisquall	i Rd.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				Si	te Con	ditions	(Hard =	= 10, So	ft = 15)		
Average Daily 1	Traffic (Adt):	39,131 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	7.00%			Ме	dium Tru	ıcks (2	Axles):	15		
Peak Ho	our Volume:	2,739 vehicles	S		He	avy Truc	ks (3+	Axles):	15		
Veh	nicle Speed:	50 mph		Ve	ehicle l	Mix					
Near/Far Lar	ne Distance:	72 feet		-		icleType		Dav	Evening	Night	Dailv
Site Data							lutos:	80.9%	-		97.72%
	rier Heiaht:	0.0 feet			М	edium Tr	ucks:	84.6%		12.6%	
Barrier Type (0-Wa		0.0			1	Heavy Tr	ucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dis	. ,	62.0 feet									
Centerline Dist. t	o Observer:	62.0 feet		N	oise Sc	ource El			eet)		
Barrier Distance t	o Observer:	0.0 feet				Autos		.000			
Observer Height (A	Above Pad):	5.0 feet				m Trucks		.297			
	d Elevation:	0.0 feet			Heav	y Trucks	s: 8	.004	Grade Ad	ustment	0.0
Roa	d Elevation:	0.0 feet		La	ne Eq	uivalent	Distar	ice (in f	eet)		
F	Road Grade:	0.0%				Autos	s: 50	.725			
	Left View:	-90.0 degree	es		Mediu	m Trucks	s: 50	.550			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 50	.567			
FHWA Noise Mode	I Calculation:	S									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	70.20	1.98		-0.20		-1.20		-4.70	0.0	000	0.000
Medium Trucks:	81.00	-19.28		-0.17		-1.20		-4.88		000	0.000
Heavy Trucks:	85.38	-16.01		-0.18		-1.20		-5.32	0.0	000	0.000
Unmitigated Noise	•										
	Leq Peak Hou			Leq Eve		Leq	Night		Ldn		NEL
Autos:	70		70.6		67.3		62.	-	71.2	-	71.7
Medium Trucks:	60		60.4		51.6		53.		61.4		61.5
Heavy Trucks: Vehicle Noise:	68 72		67.9 72.7		61.1		61. 65.		69.2 73.6		69.0 73.9
					08.4		65.	.3	/3.6)	73.9
	e to Noise Co	ntour (in feet,)				'D 4				10.4
Centerline Distance	0 10 110,00 00			70 dF	3 <i>A</i>	65 (7BA		i0 dBA	5.5	dBA
Centerline Distanc	0 10 110100 00		Ldn:	70 dE	3 <i>A</i> 108	65 (3BA 23:		0 <i>aBA</i> 500		<i>aBA</i> 1.078

Wednesday, November 22, 2023

	FHWA-RI	D-77-108 HIGH\	WAY NO	ISE I	PREDIC	CTION M	ODEL	(9/12/2	(021)			
Road Na	ario: OYC+P ame: Hesperia R nent: s/o Nisqual							: Nisqu : 15241	alli Trailer L	ot		
SITI Highway Data	E SPECIFIC IN	IPUT DATA		S	ite Con				L INPUT	s		
Average Dail Peak Hot Peak	ly Traffic (Adt): ur Percentage: Hour Volume: /ehicle Speed:	42,905 vehicle 7.00% 3,003 vehicles 50 mph			Ме	edium Tru eavy Truc	ucks (2	Autos Axles)	: 15 : 15			
Near/Far L	Lane Distance:	72 feet			Veh	icleType		Day	Evening	Night	Daily	
Site Data B Barrier Type (0-	Barrier Height: Wall, 1-Berm):	0.0 feet 0.0				edium Ti Heavy Ti		80.99 84.69 82.49	6 2.8%	9.6% 12.6% 13.3%	0.73%	
Centerline I	Dist. to Barrier:	62.0 feet		N	nise Sr	ource El	evatio	ns (in f	eet)			
Barrier Distand Observer Heigh	Centerline Dist. to Observer: 62.0 feet Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet					Autos: 0.000 Medium Trucks: 2.297 Heavy Trucks: 8.004 Grade Adjustment: 0.0						
R	Road Elevation:	0.0 feet		L	ane Eq	uivalent	Dista	nce (in	feet)			
	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Auto: m Truck: yy Truck:	s: 5	0.725 0.550 0.567				
FHWA Noise Mo	del Calculation	s										
VehicleType	REMEL	Traffic Flow	Distan	се	Finite	Road	Fre	snel	Barrier Att	en Be	rm Atten	
Autos	s: 70.20	2.38		-0.20		-1.20		-4.70	0.0	000	0.000	
Medium Trucks	s: 81.00	-18.88		-0.17		-1.20		-4.88	0.0	000	0.000	
Heavy Trucks				-0.18		-1.20		-5.32	0.0	000	0.000	
Unmitigated Noi												
VehicleType	Leq Peak Hot			q Ev	ening		Night		Ldn		NEL	
Autos			1.0		67.7			3.0	71.6	-	72.1	
Medium Trucks			80.8 88.3		52.0 61.5			3.8 .6	61.8 69.6	-	61.9 69.7	
Heavy Trucks Vehicle Noise			3.1		68.8		_	5.7	74.0		74.3	
Centerline Dista	nce to Noise C	ontour (in feet)										
		,,		70 di	BA	65	dBA		60 dBA	55	dBA	
		ı	dn:		115		24	7	532		1,146	
		CA	IEL:		121		26	0	560		1,207	

Wednesday, November 22, 2023

	FHWA-RD	-77-108 HIGH	WAY	NOISE	PREDIC	CTION M	ODEL	(9/12/2	021)		
Road Nar	rio: HY ne: Hesperia Ro ent: s/o Nisqualli						Name: umber:		alli Trailer L	_ot	
	SPECIFIC IN	PUT DATA			i4- O				L INPUT	S	
Highway Data				3	ne Con	ditions	(Hara -				
Average Daily	Traffic (Adt):	50,671 vehicle	es					Autos:			
Peak Hou	r Percentage:	7.00%				edium Tru		/			
Peak I	Hour Volume:	3,547 vehicles	S		He	eavy Truc	cks (3+	Axles):	15		
Ve	ehicle Speed:	50 mph		ν	ehicle	Mix					
Near/Far La	ane Distance:	72 feet		F.		icleType		Dav	Evening	Niaht	Dailv
Site Data							Autos:	80.9%		9.69	6 97.72%
Rs	arrier Height:	0.0 feet			М	edium Tr	ucks:	84.6%	2.8%	12.69	6 0.73%
Barrier Type (0-V	Vall, 1-Berm):	0.0				Heavy Tr	ucks:	82.4%	4.3%	13.39	6 1.55%
	ist. to Barrier:	62.0 feet		۸	loise S	ource Ele	evatior	ns (in fe	eet)		
Centerline Dist.	to Observer:	62.0 feet				Autos		.000	,		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Trucks		.297			
Observer Height	(Above Pad):	5.0 feet				vy Trucks		.004	Grade Ad	liustmen	t: 0.0
P	Pad Elevation:	0.0 feet								,	
Ro	ad Elevation:	0.0 feet		L	ane Eq	uivalent	Distar	ice (in i	feet)		
	Road Grade:	0.0%				Autos	s: 50	.725			
	Left View:	-90.0 degree	es			m Trucks		.550			
	Right View:	90.0 degree	es		Hea	vy Trucks	s: 50	.567			
FHWA Noise Mod	lel Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	70.20	3.10		-0.20	1	-1.20		-4.70	0.0	000	0.000
Medium Trucks:	81.00	-18.16		-0.17		-1.20		-4.88	0.0	000	0.000
Heavy Trucks:	85.38	-14.89		-0.18	1	-1.20		-5.32	0.	000	0.000
Unmitigated Nois										_	
VehicleType	Leq Peak Hou		_	Leq Ev			Night		Ldn	_	NEL
Autos:		-	71.7		68.5		63.		72.		72.8
Medium Trucks:		-	61.5		52.7		54.	-	62.	-	62.6
Heavy Trucks:			69.0		62.2		62.		70.		70.5
Vehicle Noise:	74.	0	73.9		69.5		66.	4	74.	7	75.1
Centerline Distan	ce to Noise Co	ntour (in feet))	70 d	D/	65.	dBA		SO dBA		5 dBA
			Ldn:	70 a		00 0					
	Lan: CNEL:								1,280		
		CI	VEL:		135		290	J	626)	1,348

Scenario Road Name Road Segmen	e: Enterprise							Nisqua 15241	ılli Trailer L	.ot	
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				3	ite Cor	nditions	(Hara				
Average Daily 1	. ,	978 vehic	les					Autos:	15		
Peak Hour F		7.00%				edium Ti		,			
	our Volume:	68 vehicle	es		He	eavy Tru	cks (3+	Axles):	15		
	nicle Speed:	40 mph		V	ehicle	Mix					
Near/Far Lan	ne Distance:	36 feet			Veh	icleType	,	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Ran	rier Heiaht:	0.0 feet			М	ledium 7	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-Wa		0.0				Heavy 7	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dis		32.0 feet		ļ.,							
Centerline Dist. t	o Observer:	32.0 feet		N	oise S	ource E			eet)		
Barrier Distance t		0.0 feet				Auto		0.000			
Observer Height (A		5.0 feet				m Truck		2.297			
	d Elevation:	0.0 feet			Hea	vy Truck	:s: 8	3.004	Grade Ad	justment	0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distai	nce (in i	feet)		
F	Road Grade:	0.0%				Auto	s: 26	5.926			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 26	3.595			
	Right View:	90.0 degre			Hea	vy Truck	s: 26	3.628			
FHWA Noise Mode	l Calculation	s									
VehicleType	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		m Atten
Autos:	66.51			3.93		-1.20		-4.51		000	0.00
Medium Trucks:	77.72			4.01		-1.20		-4.86		000	0.00
Heavy Trucks:	82.99			4.00		-1.20		-5.72	0.0	000	0.00
Unmitigated Noise			_							_	
	Leq Peak Hou			Leq Eve			Night		Ldn		VEL
Autos:		3.2	56.0		52.7		48		56.		57.
Medium Trucks:		5.2	46.2		37.4		39		47.		47.
Heavy Trucks:		1.7	54.6		47.8		48		55.	-	56.
Vehicle Noise:		3.8	58.6		54.0)	51	.3	59.	5	59.
		ontour (in fee	t)								
Centerline Distance	e to Noise Co	omean (m ree		70 4	DΛ	65	AD A			FE	AD A
Centerline Distance	e to Noise Ci	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Ldn:	70 di	BA 6	65	dBA 1	4	60 dBA 30		dBA 64

	104.5										
Scenario									ılli Trailer L	.ot	
Road Name Road Segment	: Hesperia Ro					JOD I	lumber:	15241			
SITE S Highway Data	PECIFIC IN	PUT DATA			Site Con				L INPUT off = 15)	S	
Average Daily T	raffic (Adt):	50,688 vehicle	r		0.10 00	uo	(77070	Autos:			
Peak Hour P	. ,	7.00%	5		Mo	dium Ti	ucks (2				
	-	3.548 vehicles					cks (3+	,			
	icle Speed:	50 mph		L			CAS (S.	ANICO).	10		
Near/Far Lane		72 feet		L	Vehicle I						
	Distance.	72 1661			Veh	icleTyp		Day	Evening	Night	Daily
ite Data							Autos:	80.9%			97.729
Barr	ier Height:	0.0 feet					rucks:	84.6%	2.8%	12.6%	0.739
Barrier Type (0-Wa	II, 1-Berm):	0.0			F	Heavy 7	rucks:	82.4%	4.3%	13.3%	1.559
Centerline Dist	to Barrier:	62.0 feet		ŀ	Noise Sc	urco F	lovation	e (in f	not)		
Centerline Dist. to	Observer:	62.0 feet		ŀ	140/36 00	Auto		.000			
Barrier Distance to	Observer:	0.0 feet			Modiu	m Truck		.297			
Observer Height (A	bove Pad):	5.0 feet				y Truck		.004	Grade Ad	iustment	0.0
Pad	l Elevation:	0.0 feet			77000	y much		.004	0,000,10	doumont.	0.0
Road	d Elevation:	0.0 feet			Lane Equ	uivalen	t Distan	ce (in	feet)		
R	oad Grade:	0.0%				Auto	s: 50	.725			
	Left View:	-90.0 degree	S		Mediui	m Truck	s: 50	.550			
	Right View:	90.0 degree	S		Heav	y Truck	s: 50	.567			
HWA Noise Model	Calculations										
VehicleType	REMEL	Traffic Flow	Dis	tance		Road	Fres		Barrier Att		m Atten
Autos:	70.20	3.10		-0.2		-1.20		-4.70		000	0.00
Medium Trucks:	81.00	-18.16		-0.1		-1.20		-4.88		000	0.00
Heavy Trucks:	85.38	-14.89		-0.1	18	-1.20		-5.32	0.0	000	0.00
Inmitigated Noise	•		arrie								
,,, .	eq Peak Hou	- 1 - 7		Leq E	vening	Leq	Night	_	Ldn		VEL
Autos:	71.		1.7		68.5		63.		72.4		72.
Medium Trucks:	61. 69.		9.0		52.7 62.2		54. 62.		62.5 70.5		62.
Heavy Trucks: Vehicle Noise:	74.		3.9		69.5		66.		70.		70. 75.
Centerline Distance	to Noise Co	ntour (in feet)									
		(70	dBA	65	dBA		60 dBA	55	dBA
		ı	.dn:		128		276	3	594		1,28
	CNEL:				135 291 626 1						

Wednesday, November 22, 2023

FHWA-R	D-77-108 HIGHW	AY NOIS	E PREDIC	TION N	IODEL (9/	12/20	21)		
Scenario: E+P Road Name: Enterprise Road Segment: n/o Nisqua					Name: N lumber: 15		i Trailer Lo	ot	
SITE SPECIFIC II	IPUT DATA			N	IOISE M	ODEL	INPUTS	;	
Highway Data			Site Con	ditions	(Hard = 1	0, Soi	t = 15)		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	1,116 vehicles 7.00% 78 vehicles				A ucks (2 A) cks (3+ A)	/	15 15 15		
Vehicle Speed:	40 mph		Vehicle I	Mix					
Near/Far Lane Distance:	36 feet			icleType		av	Evenina	Night	Dailv
Site Data						0.9%	9.5%	9.6%	87.79%
Barrian Halanta	0.0 feet		м	edium T		4.6%	2.8%	12.6%	1.46%
Barrier Height: Barrier Type (0-Wall, 1-Berm):	0.0		1	Heavy T	rucks: 8	2.4%	4.3%	13.3%	10.76%
Centerline Dist. to Barrier:	32.0 feet		Noise So	ource El	evations	(in fe	et)		
Centerline Dist. to Observer:	32.0 feet			Auto	s: 0.00	00	,		
Barrier Distance to Observer:	0.0 feet		Mediu	m Truck					
Observer Height (Above Pad):	5.0 feet			y Truck			Grade Adju	ustment:	0.0
Pad Elevation:	0.0 feet			•		•			
Road Elevation:	0.0 feet		Lane Eq	uivalen	t Distance	•	eet)		
Road Grade:	0.0%			Auto	s: 26.92	26			
Left View:	-90.0 degrees		Mediu	m Truck	s: 26.59	95			
Right View:	90.0 degrees		Heav	y Truck	s: 26.62	28			
FHWA Noise Model Calculation	s								
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresne	I E	Barrier Atte	n Beri	n Atten
Autos: 66.51	-12.96	3.	93	-1.20		4.51	0.0	00	0.000
Medium Trucks: 77.72	-30.76	4.	01	-1.20		4.86	0.0	00	0.000
Heavy Trucks: 82.99	-22.08	4.	00	-1.20		5.72	0.0	00	0.000
Unmitigated Noise Levels (with	out Topo and ba	rrier atte	nuation)						
VehicleType Leq Peak Ho	ur Leq Day	Leq	Evening	Leq	Night		Ldn	CN	IEL
Autos: 56	5.3 56		52.8		48.1		56.7		57.2
Medium Trucks: 49	9.8 49	.8	41.0		42.8		50.8		50.9
Heavy Trucks: 63	3.7 63	.6	56.8		57.0		64.9		65.1
Vehicle Noise: 64	1.6 64	.5	58.4		57.6		65.6		65.9
Centerline Distance to Noise C	ontour (in feet)	7/) dBA	65	dBA) dBA		dBA
	La		16	65	35	00	76	55	164
	CNE	17		35		76 79		170	

Wednesday, November 22, 2023

	FHWA-RI	D-77-108 HIGH	IWAY	NOISI	E PREDIC	TION N	IODEL (9	9/12/20	021)		
Road Nar	rio: OYC ne: Enterprise ent: n/o Nisqual						Name: Name: Name: Name: 1		lli Trailer L	ot	
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	10, So	oft = 15)		
Average Daily	Traffic (Adt):	997 vehicle	es				,	Autos:	15		
Peak Hou	Percentage:	7.00%					ucks (2 A	,	15		
Peak I	Hour Volume:	70 vehicle	S		He	avy Tru	cks (3+ A	(xles	15		
Ve	ehicle Speed:	40 mph			Vehicle	Mix					
Near/Far La	ane Distance:	36 feet				icleType		Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.69	6 97.72%
Ba	rrier Heiaht:	0.0 feet			М	edium T	rucks:	84.6%	2.8%	12.69	6 0.73%
Barrier Type (0-V		0.0			1	Heavy T	rucks:	82.4%	4.3%	13.39	% 1.55%
Centerline D	ist. to Barrier:	32.0 feet			Noise So	urce Fl	ovations	in fo	not)		
Centerline Dist.	to Observer:	32.0 feet			NOISE SC	Auto		000	ei)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck		97			
Observer Height	(Above Pad):	5.0 feet				/y Truck		004	Grade Ad	iuetmar	at: 0.0
F	ad Elevation:	0.0 feet			rical	ry ITUCK	3. 0.0	J04	Orauc Au	usunci	n. 0.0
Ro	ad Elevation:	0.0 feet			Lane Eq	uivalent	Distanc	e (in f	feet)		
	Road Grade:	0.0%				Auto	s: 26.9	926			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 26.5	595			
	Right View:	90.0 degre	es		Heav	y Truck	s: 26.6	528			
FHWA Noise Mod	lel Calculation	s									
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresn	_	Barrier Att	en Be	erm Atten
Autos:				3.		-1.20		-4.51		000	0.000
Medium Trucks:				4.		-1.20		-4.86		000	0.000
Heavy Trucks:	82.99	-30.98		4.	00	-1.20		-5.72	0.0	000	0.000
Unmitigated Nois			_								
VehicleType	Leq Peak Hou			Leq E	ening	_	Night		Ldn		CNEL
Autos:		3.3	56.1		52.8		48.1		56.7		57.2
Medium Trucks:		3.3	46.3		37.5		39.3		47.3	-	47.4
Heavy Trucks:		1.8	54.7		47.9		48.1		56.0		56.2
Vehicle Noise:		3.9	58.7		54.1		51.4		59.6	j .	60.0
Centerline Distan	ce to Noise Co	ontour (in feet)								
			[70	dBA	65	dBA	6	0 dBA	_	5 dBA
		_	Ldn:		7 14 30			65			
		C	NEL:		7 15 32				68		

	FRWA-RD	-77-108 HIGH	WAII	NOISE	PREDIC	I ION IV	IODEL	(9/12/2	.021)		
Scenari	o: HY					Project	Name	: Nisqua	alli Trailer L	.ot	
	e: Enterprise S					Job ∧	lumber	15241			
Road Segmen	nt: n/o Nisqualli	Rd.									
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				5	Site Con	ditions	(Hard	= 10, S	oft = 15)		
Average Daily	Traffic (Adt):	1,192 vehicle	es					Autos	15		
Peak Hour	Percentage:	7.00%			Me	dium Tr	ucks (2	Axles):	: 15		
Peak H	our Volume:	83 vehicles	3		He	avy Tru	cks (3+	Axles).	: 15		
Vel	hicle Speed:	40 mph		1	/ehicle l	Mix					
Near/Far Lar	ne Distance:	36 feet		F	VehicleType Day Evening Night						Daily
Site Data							Autos:	80.9%	-	9.6%	
Rar	rier Heiaht:	0.0 feet			М	edium T	rucks:	84.6%	6 2.8%	12.6%	0.73%
Barrier Type (0-W		0.0			- 1	Heavy T	rucks:	82.4%	6 4.3%	13.3%	1.55%
Centerline Dis		32.0 feet		١.	O-			(:- 6	41		
Centerline Dist. t	to Observer:	32.0 feet		-	Voise Sc				eet)		
Barrier Distance t	to Observer:	0.0 feet				Auto		0.000 2.297			
Observer Height (Above Pad):	5.0 feet				m Truck			Grade Ad	iuctmont	. 0.0
Pa	d Elevation:	0.0 feet			neav	y Truck	S: (3.004	Grade Ad	Justinent	0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalen	Dista	nce (in	feet)		
F	Road Grade:	0.0%				Auto	s: 2	6.926			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 2	6.595			
	Right View:	90.0 degree	es		Heavy Trucks: 26.628						
FHWA Noise Mode	l Calculations	;		-							
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fre	snel	Barrier Att	en Ber	m Atten
Autos:	66.51	-12.21		3.93	-	-1.20		-4.51		000	0.000
Medium Trucks:	77.72	-33.47		4.01		-1.20		-4.86		000	0.000
Heavy Trucks:	82.99	-30.20		4.00)	-1.20		-5.72	0.0	000	0.000
Unmitigated Noise											
	Leq Peak Hou		_	Leq Ev		Leq	Night		Ldn		VEL
Autos:	57.		56.9		53.6		48		57.		57.9
Medium Trucks:	47.		47.1		38.3		40		48.		48.2
Heavy Trucks:	55.	-	55.5		48.7		48		56.	-	56.9
Vehicle Noise:	59.	6	59.5		54.9		52	!.1	60.	4	60.7
Centerline Distanc	e to Noise Co	ntour (in feet)	<u> </u>	70 a	ID A	e e	dBA	1 .	60 dBA	FE	dBA
				700	חטו	03	UDA	- 1 '	UU UDA	33	UDA
			Ldn:		7		4	6	34		73

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION MO	ODEL	(9/12/20	021)		
	: OYC+P								lli Trailer L	.ot	
	e: Enterprise					Job Nu	ımber:	15241			
Road Segmen	t: n/o Nisqua	lli Rd.									
	PECIFIC IN	NPUT DATA							L INPUT	S	
Highway Data				2	one Con	ditions (Hara =				
Average Daily 1	. ,	1,136 vehicl	es					Autos:	15		
Peak Hour F		7.00%				dium Tru		,	15		
	our Volume:	79 vehicle	S		He	avy Truci	ks (3+	Axles):	15		
	icle Speed:	40 mph		١	/ehicle	Wix					
Near/Far Lan	e Distance:	36 feet			Veh	icleType		Day	Evening	Night	Daily
Site Data						A	utos:	80.9%	9.5%	9.6%	87.969
Ran	rier Heiaht:	0.0 feet			М	edium Tru	ucks:	84.6%	2.8%	12.6%	1.449
Barrier Type (0-Wa		0.0				Heavy Tru	ucks:	82.4%	4.3%	13.3%	10.609
Centerline Dis	. ,	32.0 feet			/- i 0			- /:- #-	-41		
Centerline Dist. to	o Observer:	32.0 feet			voise S	ource Ele		- (et)		
Barrier Distance to	o Observer:	0.0 feet				Autos		.000			
Observer Height (A	Above Pad):	5.0 feet				m Trucks	. –	.297	0		
	d Elevation:	0.0 feet			Heav	y Trucks	: 8	.004	Grade Ad	ustment	0.0
Roa	d Elevation:	0.0 feet		L	ane Eq	uivalent	Distan	ce (in t	eet)		
R	Road Grade:	0.0%				Autos	: 26	.926			
	Left View:	-90.0 degre	es		Mediu	m Trucks	: 26	.595			
	Right View:	90.0 degre	es		Hear	y Trucks	: 26	.628			
FHWA Noise Mode	l Calculation	ıs									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	66.51			3.93	-	-1.20		-4.51		000	0.00
Medium Trucks:	77.72			4.01		-1.20		-4.86		000	0.00
Heavy Trucks:	82.99	-22.07		4.00)	-1.20		-5.72	0.0	000	0.00
Unmitigated Noise	•										
	Leq Peak Ho			Leq Ev		Leg N	_		Ldn	_	NEL
Autos:		5.4	56.2		52.9		48.	_	56.8	-	57.
Medium Trucks:		9.8	49.8		41.0		42.	-	50.8	-	51.
Heavy Trucks:		3.7	63.6		56.8		57.		64.9		65.
Vehicle Noise:		1.6	64.5		58.4		57.	1	65.7	′	65.
Centerline Distance	e to Noise C	ontour (in feet	t)	70 d	IRΔ	65 d	IRΔ	-	i0 dBA	55	dBA
			Ldn:		16		35		76		16

Wednesday, November 22, 2023

	FHWA-RD-	77-108 HIGHV	VAY I	NOISE	PREDIC	TION M	ODEL	(9/12/2	021)		
Scenario: H Road Name: Ei Road Segment: n/	nterprise St							: Nisqua : 15241	alli Trailer L	_ot	
SITE SPE	CIFIC INF	PUT DATA			Sito Con	N ditions			L INPUT	S	
Average Daily Traffi Peak Hour Perc Peak Hour \ Vehicle Near/Far Lane Di	entage: /olume: Speed:	1,330 vehicles 7.00% 93 vehicles 40 mph 36 feet	5		Me He Vehicle I	dium Tru avy Truc Mix	icks (2	Autos. Axles).	15 15 15		
	istarice.	30 leet			Veh	icleType		Day	Evening	Night	Daily
Site Data Barrier Barrier Type (0-Wall, 1		0.0 feet 0.0				edium Tr Heavy Tr		80.99 84.69 82.49	6 2.8%	9.6% 12.6% 13.3%	1.34%
Centerline Dist. to	Barrier:	32.0 feet		1	Voise So	ource Ele	evatio	ns (in f	eet)		
Barrier Distance to Ob Observer Height (Abov	Centerline Dist. to Observer: 32.0 feet Barrier Distance to Observer: 0.0 feet bbserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet				Mediu	Autos m Trucks ry Trucks	s: (s: 2	0.000 2.297 3.004	Grade Ad	ljustment	: 0.0
Road Ele	evation:	0.0 feet		I	ane Eq	uivalent	Dista	nce (in	feet)		
Le	Grade: ft View: ht View:	0.0% -90.0 degrees 90.0 degrees				Autos m Trucks ry Trucks	s: 20	6.926 6.595 6.628			
FHWA Noise Model Ca	Iculations										
VehicleType Ri	EMEL	Traffic Flow	Dist	tance	Finite	Road	Fres	snel	Barrier Att	en Ber	m Atten
Autos:	66.51	-12.12		3.93	3	-1.20		-4.51	0.	000	0.000
Medium Trucks: Heavy Trucks:	77.72 82.99	-30.36 -21.96		4.0		-1.20 -1.20		-4.86 -5.72		000 000	0.000
Unmitigated Noise Lev	els (witho	ut Topo and b	arrie	r atten	uation)						
VehicleType Leq	Peak Hour	Leq Day		Leg Ev	ening	Leq	Night		Ldn	C	NEL
Autos:	57.1	1 5	7.0		53.7		48	.9	57.	6	58.0
Medium Trucks:	50.2	2 5	0.2		41.4		43	.2	51.	2	51.3
Heavy Trucks:	63.8	-	3.7		56.9		57	• •	65.	-	65.2
Vehicle Noise:	64.8	3 6	4.7		58.7		57	.9	65.	9	66.1
Centerline Distance to	Noise Cor	ntour (in feet)			·D.4	-	/D.4	1	00 104	T	·D.4
		,		70 c		65 (dBA		60 dBA		dBA 170
	Ldn: CNEL:				17 37 79 18 38 82			170 176			

Wednesday, November 22, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION N	IODEL	(9/12/2	021)		
	io: E ne: Ottawa St. nt: w/o Hespei	ria Rd.					Name: lumber:		alli Trailer I	_ot	
	SPECIFIC IN	IPUT DATA			0:4- 0				L INPUT	s	
Highway Data					Site Con	aitions	(Hara :				
Average Daily	. ,	561 vehicle	es					Autos:			
	Percentage:	7.00%				dium Tr					
Peak F	lour Volume:	39 vehicle	S		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		1	Vehicle i	Mix					
Near/Far La	ne Distance:	36 feet		F		icleType	,	Dav	Evenina	Night	Daily
Site Data							Autos:	80.9%	6 9.5%	9.69	6 97.72%
Ra	rrier Height:	0.0 feet			М	edium T	rucks:	84.6%	6 2.8%	12.69	6 0.73%
Barrier Type (0-W		0.0				Heavy T	rucks:	82.4%	4.3%	13.39	% 1.55%
Centerline Di		32.0 feet			Noise So			- /:- £	41		
Centerline Dist.	to Observer:	32.0 feet		Ľ	voise so			_ •	eet)		
Barrier Distance	to Observer:	0.0 feet				Auto		.000			
Observer Height	(Above Pad):	5.0 feet				m Truck		.297			
-	ad Elevation:	0.0 feet			Heav	y Truck	s: 8	.004	Grade Ad	justmer	nt: 0.0
	ad Flevation:	0.0 feet		1	Lane Eq	uivalen	t Distar	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 26	.926	,		
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 26	.595			
	Right View:	90.0 degree			Heav	y Truck	s: 26	.628			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier At	en Be	erm Atten
Autos:	66.51	-15.48		3.9	3	-1.20		-4.51	0.	000	0.000
Medium Trucks:	77.72	-36.74		4.0	1	-1.20		-4.86	0.	000	0.000
Heavy Trucks:	82.99	-33.47		4.0	0	-1.20		-5.72	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barrie	er atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	/	Leq E	vening	Leq	Night		Ldn	(CNEL
Autos:	53	3.8	53.6		50.3		45	.6	54.	2	54.7
Medium Trucks:			43.8		35.0		36	-	44.	8	44.9
Heavy Trucks:	52	2.3	52.2		45.4		45	.6	53.	5	53.7
Vehicle Noise:	56	5.4	56.2		51.6		48	9	57.	1	57.5
Centerline Distan	ce to Noise Co	ontour (in feet)								
				70 (dBA	65	dBA	-	60 dBA	5	5 dBA
			Ldn:		4		1)	21		44
		C	NEL:		5		1)	22	2	47

	o: OYC e: Ottawa St. nt: w/o Hesperi	a Rd.					t Name: Iumber:		illi Trailer L	ot	
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data				S	ite Con	ditions	(Hard =				
Average Daily	. ,	656 vehicl	es					Autos:	15		
Peak Hour I		7.00%					ucks (2	,			
	our Volume:	46 vehicle	S		He	avy Tru	cks (3+	Axles):	15		
	nicle Speed:	40 mph		V	ehicle i	Mix					
Near/Far Lar	ne Distance:	36 feet			Veh	icleType	•	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Rar	rier Heiaht:	0.0 feet			М	edium T	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-Wa		0.0				Heavy T	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dis		32.0 feet		-							
Centerline Dist. t		32.0 feet		N	oise So		levation		eet)		
Barrier Distance t		0.0 feet				Auto		.000			
Observer Height (/		5.0 feet				m Truck		.297			
	d Elevation:	0.0 feet			Heav	y Truck	s: 8	.004	Grade Ad	ustment	0.0
	d Elevation:	0.0 feet		L	ane Eq	uivalen	t Distan	ce (in i	feet)		
F	Road Grade:	0.0%				Auto	s: 26	.926			
	Left View:	-90.0 degre	es		Mediu	m Truck	s: 26	.595			
	Right View:	90.0 degre			Heav	y Truck	s: 26	.628			
FHWA Noise Mode	l Calculations	;									
VehicleType	REMEL	Traffic Flow	Dis	tance	Finite	Road	Fres	nel	Barrier Att	en Ber	m Atten
Autos:	66.51	-14.80		3.93		-1.20		-4.51		000	0.000
Medium Trucks:	77.72	-36.06		4.01		-1.20		-4.86		000	0.000
Heavy Trucks:	82.99	-32.79		4.00		-1.20		-5.72	0.0	000	0.000
Unmitigated Noise			barrie	er attenu	ıation)						
	Leq Peak Hou	.,.,		Leq Eve			Night		Ldn		VEL
Autos:	54.		54.3		51.0		46.	-	54.9		55.3
Medium Trucks:	44.	-	44.5		35.7		37.	-	45.5	-	45.6
Heavy Trucks:	53.		52.9		46.1		46.		54.2		54.4
Vehicle Noise:	57.	0	56.9		52.3		49.	5	57.8	3	58.1
Centerline Distanc	e to Noise Co	ntour (in feet)	70 di			dBA	1 .	60 dBA		dBA
			Ldn:	70 al	БA 5	00	UDA 11		23 23		ава 49

Scenario	n· F+P					Project	Name:	Nisaus	ılli Trailer L	ot	
	e: Ottawa St.						umber:		iii rraliei L	.01	
Road Segmen		ia Rd.				00074	uniber.	10241			
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data				Si	te Con	ditions	(Hard =	10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	584 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	7.00%			Me	dium Tri	ucks (2	Axles):	15		
Peak Ho	our Volume:	41 vehicle	S		He	avy Truc	cks (3+ .	Axles):	15		
Vel	nicle Speed:	40 mph		V	ehicle l	Mix					
Near/Far Lar	ne Distance:	36 feet		-		icleType		Dav	Evening	Niaht	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	95.379
Bar	rier Heiaht:	0.0 feet			Me	edium T	rucks:	84.6%	2.8%	12.6%	0.909
Barrier Type (0-Wa		0.0			F	leavy T	rucks:	82.4%	4.3%	13.3%	3.739
Centerline Dis	t. to Barrier:	32.0 feet		N	nise Sc	urce El	evation	s (in fe	eet)		
Centerline Dist. t	o Observer:	32.0 feet		-	,,,,,,	Auto		000	,,,,		
Barrier Distance t	o Observer:	0.0 feet			Mediu	m Truck		297			
Observer Height (/	Above Pad):	5.0 feet				v Truck		004	Grade Ad	iustment	0.0
Pa	d Elevation:	0.0 feet			77007	<i>y 11001</i>	J. J.				
	d Elevation:	0.0 feet		La	ne Eq	uivalent			feet)		
F	Road Grade:	0.0%				Auto.		.926			
	Left View:	-90.0 degree	es			m Truck		.595			
	Right View:	90.0 degree	es		Heav	y Truck	s: 26	.628			
FHWA Noise Mode											
VehicleType	REMEL	Traffic Flow	Dista		Finite		Fresi	_	Barrier Att		m Atten
Autos:	66.51	-15.42		3.93		-1.20		-4.51		000	0.00
Medium Trucks:	77.72	-35.68		4.01		-1.20		-4.86		000	0.00
Heavy Trucks:	82.99	-29.49		4.00		-1.20		-5.72	0.0	000	0.00
Unmitigated Noise											
	Leq Peak Hou		_	eq Eve	_	Leq	Night		Ldn		NEL
Autos:	53		53.7		50.4		45.		54.3	-	54.
	44		44.9		36.1		37.	-	45.9	-	46.
Medium Trucks:			56.2		49.4 53.0		49.	-	57.5		57.
Heavy Trucks:	56						51.	4	59.4	+	59.
Heavy Trucks:_ Vehicle Noise:	58	.4	58.3		33.0						
Heavy Trucks:_ Vehicle Noise:	58	.4		70 dF		65	dRA	-	in dBA	55	dBA
Heavy Trucks:	58	.4		70 dE		65	dBA		60 dBA 29		dBA 63

Wednesday, November 22, 2023

	FHWA-RE)-77-108 HIGH\	WAY NOI	SEI	PREDIC	TION N	IODEL	(9/12/2	2021)		
Road Na	ario: OYC+P me: Ottawa St. ent: w/o Hesper	ia Rd.						: Nisqu : 15241	alli Trailer L	.ot	
SITE Highway Data	SPECIFIC IN	PUT DATA							EL INPUT	S	
Average Dail Peak Hou Peak V	y Traffic (Adt): ur Percentage: Hour Volume: 'ehicle Speed: ane Distance:	679 vehicle 7.00% 48 vehicles 40 mph 36 feet	-		Me He 'ehicle l	edium Tra eavy Tru Mix	ucks (2 cks (3+	Autos Axles)	: 15 : 15		
	ane Distance.	30 1661			Veh	icleType		Day	Evening	Night	Daily
Site Data B Barrier Type (0-	arrier Height: Wall, 1-Berm):	0.0 feet 0.0				edium T Heavy T		80.99 84.69 82.49	% 2.8%	9.6% 12.6% 13.3%	0.87%
Centerline Dis Barrier Distance Observer Height	Centerline Dist. to Barrier: 32.0 feet Centerline Dist. to Observer: 32.0 feet Barrier Distance to Observer: 0.0 feet bbserver Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0.0 feet					Auto Auto m Truck yy Truck	s: (ns (in 1 0.000 2.297 3.004	Grade Ad	justment	t: 0.0
R	oad Elevation:	0.0 feet		L	ane Eq	uivalen	t Dista	nce (in	feet)		
	Road Grade: Left View: Right View:	0.0% -90.0 degree 90.0 degree				Auto m Truck vy Truck	s: 2	6.926 6.595 6.628			
FHWA Noise Mo	del Calculation:	5									
VehicleType	REMEL	Traffic Flow	Distanc	е	Finite	Road	Fre	snel	Barrier Att	en Bei	rm Atten
Autos Medium Trucks Heavy Trucks	s: 77.72	-14.74 -35.14 -29.20		3.93 4.01 4.00		-1.20 -1.20 -1.20		-4.51 -4.86 -5.72	0.0	000 000	0.000 0.000 0.000
Unmitigated Nois						-1.20		-0.72		500	0.000
VehicleType	Leg Peak Hou				ening	Lea	Night		Ldn	С	NEL
Autos			54.3	,	51.0		46	.3	54.9		55.4
Medium Trucks	s: 45	.4	15.4		36.6		38	.4	46.4	4	46.5
Heavy Trucks	s: 56	.6 5	6.5		49.7		49	.9	57.	В	57.9
Vehicle Noise	58	.9 .5	8.8		53.5		51	.7	59.	В	60.1
Centerline Distar	nce to Noise Co	ntour (in feet)				,				,	
				70 d		65	dBA		60 dBA		dBA
		-	.dn: IFL:		7			4 5	31 32		67 70
		Ch			,			-	32		, 0

sday, November 22, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	CTION N	IODEL	(9/12/2	021)		
	io: HY ne: Ottawa St. nt: w/o Hespei	ria Rd.					Name: lumber:		alli Trailer I	_ot	
	SPECIFIC IN	IPUT DATA							L INPUT	s	
Highway Data					Site Cor	ditions	(Hard =	= 10, Sc	oft = 15)		
Average Daily	Traffic (Adt):	768 vehicle	es					Autos:			
Peak Hour	Percentage:	7.00%				edium Tr					
Peak F	lour Volume:	54 vehicle	S		He	eavy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		7	Vehicle	Mix					
Near/Far La	ne Distance:	36 feet		H		icleType		Dav	Evenina	Niaht	Daily
Site Data							Autos:	80.9%	. ,		% 97.72%
	rrier Height:	0.0 feet			М	edium T	rucks:	84.6%	6 2.8%	12.6	
Barrier Type (0-V		0.0 1661				Heavy T	rucks:	82.4%	4.3%	13.3	
Centerline Di		32.0 feet		H	Noise S	ouros E	lovetion	o (in f	oot)		
Centerline Dist.	to Observer:	32.0 feet		μ.	worse 3	Auto		.000	eet)		
Barrier Distance	to Observer:	0.0 feet			Modiu	m Truck		.000			
Observer Height	(Above Pad):	5.0 feet				vy Truck		.004	Grade Ad	liuctma	nt: 0.0
P	ad Elevation:	0.0 feet			пеа	vy IIuck	S. 0	.004	Grade Ad	jusune	n. 0.0
Ro	ad Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto	s: 26	.926			
	Left View:	-90.0 degree	es		Mediu	m Truck	s: 26	.595			
	Right View:	90.0 degree	es		Hea	vy Truck	s: 26	.628			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	nel	Barrier At	en B	erm Atten
Autos:	66.51			3.9	-	-1.20		-4.51		000	0.000
Medium Trucks:	77.72	-35.38		4.0	1	-1.20		-4.86	0.	000	0.000
Heavy Trucks:	82.99	-32.11		4.0	0	-1.20		-5.72	0.	000	0.000
Unmitigated Noise	e Levels (with	out Topo and	barri	er atten	uation)						
VehicleType	Leq Peak Hou	ır Leq Day	/	Leq E	vening	Leq	Night		Ldn		CNEL
Autos:			55.0		51.7		46.	.9	55.		56.0
Medium Trucks:	45	5.1	45.2		36.4		38.	.1	46.	2	46.3
Heavy Trucks:			53.6		46.8		46.	-	54.	-	55.0
Vehicle Noise:	57	7.7	57.6		53.0		50.	2	58.	5	58.8
Centerline Distant	ce to Noise C	ontour (in feet)								
				70 (dBA	65	dBA		60 dBA	5	5 dBA
			Ldn:		5		12	2	25	5	55
		C	NEL:		6		13	2	27	,	57

	FHWA-KD	77-108 HIGH	WAT	NUISE	PREDIC	TION M	ODEL	(9/12/2	021)		
Scenari									alli Trailer L	_ot	
	e: Ottawa St.					Job N	umber	15241			
Road Segmen	nt: e/o Hesperia	Rd.									
	SPECIFIC IN	PUT DATA			0:: 0				L INPUT	S	
Highway Data					Site Con	ditions	(Hard				
Average Daily	. ,	579 vehicle	es					Autos:			
	Percentage:	7.00%				dium Tru		,			
Peak H	our Volume:	41 vehicles	S		He	avy Truc	cks (3+	Axles).	15		
	nicle Speed:	40 mph		ŀ	Vehicle i	Mix					
Near/Far Lar	ne Distance:	36 feet		ŀ	Veh	icleType		Day	Evening	Night	Daily
Site Data						A	lutos:	80.9%	9.5%	9.6%	97.72%
Bar	rier Height:	0.0 feet			М	edium Tı	ucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-W		0.0				Heavy Ti	ucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dis	t. to Barrier:	32.0 feet		ŀ	Noise So	urco El	ovatio	ne (in f	oot)		
Centerline Dist. t	to Observer:	32.0 feet		ŀ	Noise St	Auto:		0.000	eet)		
Barrier Distance t	o Observer:	0.0 feet			Modiu	m Trucks		2.297			
Observer Height (Above Pad):	5.0 feet						3.004	Grade Ad	liustmant	. 0.0
Pa	d Elevation:	0.0 feet			пеан	y Trucks	s. (5.004	Orauc Au	justinoni	0.0
Roa	d Elevation:	0.0 feet			Lane Eq	uivalent	Dista	nce (in	feet)		
F	Road Grade:	0.0%				Autos	s: 20	6.926			
	Left View:	-90.0 degree	es		Mediu	m Trucks	s: 2	6.595			
	Right View:	90.0 degree	es		Heav	y Trucks	s: 20	6.628			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fre	snel	Barrier Att	en Ber	m Atten
Autos:	66.51	-15.35		3.9	-	-1.20		-4.51		000	0.000
Medium Trucks:	77.72	-36.61		4.0)1	-1.20		-4.86	0.0	000	0.000
Heavy Trucks:	82.99	-33.34		4.0	00	-1.20		-5.72	0.0	000	0.000
Unmitigated Noise			barri								
	Leq Peak Hour			Leq E	vening		Night		Ldn		VEL
Autos:	53.9	-	53.7		50.4		45		54.		54.8
Medium Trucks:	43.9	-	43.9		35.2		36		45.	-	45.1
Heavy Trucks:	52.		52.4		45.6		45		53.		53.8
Vehicle Noise:	56.		56.4		51.8		49	1.0	57.	3	57.6
Centerline Distanc	e to Noise Cor	ntour (in feet))	70	dBA	65.	dBA		60 dBA		dBA
			L	70		05 (
			Ldn:		5		4	0	21		45

Road Nan	nio: HY+P ne: Ottawa St. nt: w/o Hesper	ia Rd.						e: Nisqua r: 15241	ılli Trailer L	_ot	
	SPECIFIC IN	PUT DATA							L INPUT	S	
Highway Data					Site C	onditions	(Hard	= 10, Sc	oft = 15)		
Average Daily	. ,	791 vehicle	S					Autos:	15		
	Percentage:	7.00%				Medium T	,	,			
	lour Volume:	55 vehicles				Heavy Tri	ıcks (3	+ Axles):	15		
	hicle Speed:	40 mph			Vehic	e Mix					
Near/Far La	ne Distance:	36 feet			V	ehicleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	95.989
Ra	rrier Height:	0.0 feet				Medium	Trucks:	84.6%	2.8%	12.6%	0.859
Barrier Type (0-W	-	0.0				Heavy	Trucks:	82.4%	4.3%	13.3%	3.169
	st. to Barrier:	32.0 feet			M-1	Source E		(: 6.	41		
Centerline Dist.	to Observer:	32.0 feet			Noise	Source E Aut		0.000	eet)		
Barrier Distance	to Observer:	0.0 feet				Auti lium Truc		2.297			
Observer Height	(Above Pad):	5.0 feet				avy Truc		8.004	Grade Ad	liustmant	
P	ad Elevation:	0.0 feet			п	avy IIuc	NS.	0.004	Grade Ad	justinent	0.0
Ro	ad Elevation:	0.0 feet			Lane I	quivaler	t Dista	ance (in i	feet)		
	Road Grade:	0.0%				Aut	os: 2	26.926			
	Left View:	-90.0 degree	S		Med	lium Truc	ks: 2	26.595			
	Right View:	90.0 degree	S		He	eavy Truc	ks: 2	26.628			
FHWA Noise Mod											
VehicleType	REMEL	Traffic Flow	Di	stance		ite Road			Barrier Att		m Atten
Autos:		-14.07		3.9		-1.20		-4.51		000	0.00
Medium Trucks:		-34.58		4.0		-1.20		-4.86		000	0.00
Heavy Trucks:		-28.89		4.0		-1.20		-5.72	0.	000	0.00
Unmitigated Nois			-								
VehicleType	Leq Peak Hou		_	Leq E	vening		Night		Ldn		VEL
Autos:		-	55.0		-	.7		7.0	55.	-	56.
Medium Trucks:			46.0			.2	-	9.0	47.	-	47.
Heavy Trucks: Vehicle Noise:			56.8 59.2			1.0		0.2 2.1	58. 60.		58. 60.
Centerline Distan	ce to Noise Co	ntour (in feet)									
		, ,		70	dBA		dBA		60 dBA		dBA
			dn.			7		15	22		7

Wednesday, November 22, 2023

	FHWA-RD	-77-108 HIGHV	VAY NOIS	SE PREDIC	TION M	ODEL	(9/12/2	(021)		
Road Nam	io: E+P ne: Ottawa St. nt: e/o Hesperi	a Rd.					Nisqu 15241	alli Trailer L	_ot	
SITE Highway Data	SPECIFIC IN	PUT DATA		Site Con				L INPUT	S	
Average Daily Peak Hour	Percentage:	586 vehicles	3	Ме	edium Tru	ıcks (2	Autos Axles)	: 15 : 15		
Ve	lour Volume: hicle Speed: ne Distance:	41 vehicles 40 mph 36 feet		Vehicle	eavy Truc Mix icleType	:KS (3+	Day	: 15	Night	Daily
Site Data Bai Barrier Type (0-W	rrier Height:	0.0 feet		м			80.9% 84.6% 82.4%	6 9.5% 6 2.8%	9.6%	97.74% 0.72%
Centerline Dis. Centerline Dist. Barrier Distance Observer Height (st. to Barrier: to Observer: to Observer: (Above Pad):	32.0 feet 32.0 feet 0.0 feet 5.0 feet			Autos m Trucks	s: (ns (in f 0.000 0.297 0.004	Grade Ad	ljustment	: 0.0
Roa					uivalent Autos m Trucks yy Trucks	s: 26 s: 26	6.926 6.595 6.628	feet)		
FHWA Noise Mode	el Calculations	1		1						
VehicleType Autos: Medium Trucks: Heavy Trucks:		-15.29 -36.61 -33.34	4	Finite i.93 i.01 i.00	-1.20 -1.20 -1.20	Fres	-4.51 -4.86 -5.72	0.	ten Ber 000 000 000	0.000 0.000 0.000
Unmitigated Noise	e Levels (with	ut Topo and b	arrier att	enuation)						
VehicleType Autos: Medium Trucks: Heavy Trucks:	Leq Peak Hou 53. 43. 52.	9 5 9 4	3.8 3.9 2.4	50.5 35.2 45.6		Night 45 36 45	.9	54. 45. 53.	4	NEL 54.8 45.1 53.8
Vehicle Noise:	56.	5 5	6.4	51.8		49		57.		57.6
Centerline Distant	ce to Noise Co	ntour (in feet)	7	0 dBA	65 (dBA		60 dBA	55	dBA
		L CN	dn:	5 5		1 1	0	21 22		46 48

Wednesday, November 22, 2023

	FHWA-RI	D-77-108 HIGH	IWAY	NOISE	PREDIC	TION N	IODEL (9/12/2	021)		
Road Nam	io: OYC ne: Ottawa St. nt: e/o Hesper	ia Rd.					Name: lumber:		alli Trailer L	.ot	
	SPECIFIC IN	IPUT DATA			0:: 0				L INPUT	s	
Highway Data					Site Con	aitions					
Average Daily	. ,	2,717 vehicle	es					Autos:			
	Percentage:	7.00%					ucks (2	/			
	lour Volume:	190 vehicle	S		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	40 mph		ŀ	Vehicle	Mix					
Near/Far La	ne Distance:	36 feet		F	Veh	icleType		Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.69	6 97.72%
Ba	rrier Height:	0.0 feet			М	edium T	rucks:	84.6%	6 2.8%	12.69	6 0.73%
Barrier Type (0-W		0.0			1	Heavy T	rucks:	82.4%	4.3%	13.39	6 1.55%
Centerline Di	st. to Barrier:	32.0 feet		ŀ	Noise So	ource F	levation	s (in f	eet)		
Centerline Dist.	to Observer:	32.0 feet		ŀ		Auto		000	001)		
Barrier Distance	to Observer:	0.0 feet			Mediu	m Truck		297			
Observer Height	(Above Pad):	5.0 feet				y Truck		004	Grade Ad	iustmer	t- 0.0
Pi	ad Elevation:	0.0 feet		L						,	
Ro	ad Elevation:	0.0 feet		L	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%				Auto		926			
	Left View:	-90.0 degre	es			m Truck		.595			
	Right View:	90.0 degre	es		Heav	y Truck	s: 26	628			
FHWA Noise Mod	el Calculation	s									
VehicleType	REMEL	Traffic Flow		stance		Road	Fresi		Barrier Att	_	erm Atten
Autos:	66.51			3.9	-	-1.20		-4.51		000	0.000
Medium Trucks:				4.0		-1.20		-4.86		000	0.000
Heavy Trucks:	82.99	-26.63		4.0	00	-1.20		-5.72	0.0	000	0.000
Unmitigated Noise			barri	er atter	nuation)					,	
VehicleType	Leq Peak Hou			Leq E	vening		Night		Ldn		CNEL
Autos:	60		60.4		57.2		52.		61.		61.5
Medium Trucks:		0.6	50.7		41.9		43.	-	51.7		51.8
Heavy Trucks:		0.2	59.1		52.3		52.		60.3		60.5
Vehicle Noise:		3.2	63.1		58.5		55.	7	64.0	ט	64.3
Centerline Distan	ce to Noise Co	ontour (in feet)					_		_	
			L	70	dBA	65	dBA		60 dBA		5 dBA
		_	Ldn:		13		27		59		127
		C	NEL:		13		29)	62	!	133

FHWA-	RD-77	7-108 HIGH	WAY	NOISE	PREDIC	CTIÓN I	MODEL	(9/12/2	021)		
Scenario: HY Road Name: Ottawa S Road Segment: e/o Hesp		d.						: Nisqua : 15241	illi Trailer L	ot	
SITE SPECIFIC	INPU	T DATA							L INPUT	s	
Highway Data					Site Cor	nditions	(Hard	= 10, Sc	oft = 15)		
Average Daily Traffic (Adt).	2	832 vehicle	es					Autos:			
Peak Hour Percentage		.00%				edium Ti		,			
Peak Hour Volume		198 vehicles	S		He	eavy Tru	icks (3+	Axles):	15		
Vehicle Speed		40 mph		f	Vehicle	Mix					
Near/Far Lane Distance		36 feet		ı	Veh	icleTyp	е	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Barrier Height		0.0 feet			M	ledium 1	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-Wall, 1-Berm)		0.0				Heavy 1	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dist. to Barrier		32.0 feet		Ī	Noise S	ource E	levatio	ns (in f	eet)		
Centerline Dist. to Observer		32.0 feet		Ī		Auto		0.000			
Barrier Distance to Observer		0.0 feet			Mediu	m Truck	ks:	2.297			
Observer Height (Above Pad)		5.0 feet			Hea	vy Truck	ks:	8.004	Grade Ad	iustment	0.0
Pad Elevation		0.0 feet									
Road Elevation		0.0 feet		-	Lane Eq				reet)		
Road Grade		.0%			14-45	Auto		6.926			
Left View Right View		90.0 degree				ım Truck vy Truck	_	6.595 6.628			
Rigiti view		90.0 degree	es		rica	vy IIuci	10. 2	0.020			
FHWA Noise Model Calculation	_										
VehicleType REMEL		affic Flow	Dis	stance		Road	Fre		Barrier Att		m Atten
Autos: 66.		-8.45		3.9	-	-1.20		-4.51		000	0.00
Medium Trucks: 77.3 Heavy Trucks: 82.9	_	-29.71 -26.44		4.0		-1.20 -1.20		-4.86 -5.72		000	0.00
Unmitigated Noise Levels (wi			.		-	-1.20		-5.72	0.0	,,,,	0.00
VehicleType Lea Peak H	_	Leg Day			vening	Leo	Night		Ldn	C	VEL
, , , , , , , , , , , , , , , , ,	60.8		60.6	209 2	57.3			2.6	61.2		61.
Medium Trucks:	50.8		50.8		42.1		43	3.8	51.8	3	52.
	59.4		59.3		52.4			2.6	60.5	5	60.
	63.4		63.3		58.7	,	55	5.9	64.2	2	64.
Centerline Distance to Noise	Conto	our (in feet)									
			П	70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		13			28	61		131
		CI	VEL:		14		-	30	64		137

		-77-108 HIGH									
	o: OYC+P								ılli Trailer L	ot	
	e: Ottawa St.					Job N	lumber.	15241			
Road Segmen	t: e/o Hesperia	a Rd.									
	SPECIFIC IN	PUT DATA			011 0				L INPUT	S	
Highway Data					Site Co.	nditions	(Hara				
Average Daily	Traffic (Adt):	2,724 vehicle	es					Autos:			
Peak Hour	Percentage:	7.00%				edium Tr					
Peak H	our Volume:	191 vehicle	s		Н	eavy Tru	cks (3+	Axles):	15		
Vel	nicle Speed:	40 mph		f	Vehicle	Mix					
Near/Far Lar	ne Distance:	36 feet		F	Vei	hicleType	,	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.729
Rar	rier Height:	0.0 feet			٨	1edium T	rucks:	84.6%	2.8%	12.6%	0.739
Barrier Type (0-W	-	0.0				Heavy T	rucks:	82.4%	4.3%	13.3%	1.559
Centerline Dis	t. to Barrier:	32.0 feet		-	Noiso S	ource E	lovatio	ne (in f	not)		
Centerline Dist. 1	to Observer:	32.0 feet		-	NOISE 3	Auto		0.000	etj		
Barrier Distance t	to Observer:	0.0 feet			Madi	m Truck		2.297			
Observer Height (Above Pad):	5.0 feet				vy Truck		3.004	Grade Ad	iustment	. 0.0
Pa	d Elevation:	0.0 feet			пеа	vy IIuck	s. c	5.004	Grade Adj	usuneni	0.0
Roa	d Elevation:	0.0 feet			Lane Ed	quivalen	t Distai	nce (in i	feet)		
F	Road Grade:	0.0%				Auto	s: 26	5.926			
	Left View:	-90.0 degre	es		Mediu	ım Truck	s: 26	3.595			
	Right View:	90.0 degre	es		Hea	vy Truck	s: 26	6.628			
FHWA Noise Mode	l Calculations										
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fres	snel	Barrier Att	en Ber	m Atten
Autos:	66.51	-8.62		3.9	93	-1.20		-4.51	0.0	000	0.00
Medium Trucks:	77.72	-29.90		4.0)1	-1.20		-4.86	0.0	000	0.00
Heavy Trucks:	82.99	-26.63		4.0	00	-1.20		-5.72	0.0	000	0.00
Unmitigated Noise	Levels (witho	ut Topo and	barri	er atter	nuation)						
., .	Leq Peak Hou			Leq E	vening		Night		Ldn		NEL
Autos:	60.	-	60.5		57.2	_	52		61.1		61.
Medium Trucks:	50.	-	50.7		41.9	-	43		51.7		51.
Heavy Trucks:	59.		59.1		52.3		52		60.3		60.
Vehicle Noise:	63.	2	63.1		58.5	5	55	.7	64.0)	64.
Centerline Distanc	e to Noise Co	ntour (in feet)								
			[70	dBA		dBA		60 dBA		dBA
			Ldn:		13		2	7	59		127
		_	NEL:		13		2	_	62		134

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FHWA-RI	D-77-108 HIGHW	AY NOIS	E PREDIC	TION M	ODEL (9	/12/2	021)		
Scenario: HY+P Road Name: Ottawa St. Road Segment: e/o Hesper	ia Rd.				Name: N umber: 1		alli Trailer L	ot	
SITE SPECIFIC IN	IPUT DATA						L INPUT	3	
Highway Data			Site Con	ditions	(Hard =	10, S	oft = 15)		
Average Daily Traffic (Adt): Peak Hour Percentage: Peak Hour Volume:	2,839 vehicles 7.00% 199 vehicles				ucks (2 A cks (3+ A	/	15		
Vehicle Speed:	40 mph		Vehicle I	Mix					
Near/Far Lane Distance:	36 feet			icleType		Dav	Evening	Night	Dailv
Site Data						80.9%	-	9.6%	. ,
Barrier Height:	0.0 feet		М	edium Ti	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-Wall, 1-Berm):	0.0		1	Heavy T	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dist. to Barrier:	32.0 feet		Noise So	ource El	evations	(in f	eet)		
Centerline Dist. to Observer:	32.0 feet			Auto	s: 0.0	100			
Barrier Distance to Observer:	0.0 feet		Mediu	m Truck					
Observer Height (Above Pad):	5.0 feet			y Truck			Grade Adj	ustment	0.0
Pad Elevation:	0.0 feet			•					
Road Elevation:	0.0 feet		Lane Eq	uivalent		_	feet)		
Road Grade:	0.0%			Auto.	s: 26.9	926			
Left View:	-90.0 degrees		Mediu	m Truck	s: 26.5	95			
Right View:	90.0 degrees		Heav	y Truck	s: 26.6	328			
FHWA Noise Model Calculation	s		1						
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresn	e/	Barrier Atte	en Ber	m Atten
Autos: 66.51	-8.44	3	.93	-1.20		-4.51	0.0	00	0.000
Medium Trucks: 77.72	-29.71	4	.01	-1.20		4.86	0.0	00	0.000
Heavy Trucks: 82.99	-26.44	4	.00	-1.20		-5.72	0.0	00	0.000
Unmitigated Noise Levels (with		rrier atte	enuation)						
VehicleType Leq Peak Hou			Evening		Night		Ldn		NEL
).8 60		57.4		52.6		61.2		61.7
).8 50		42.1		43.8		51.8		52.0
).4 59		52.4		52.6		60.5		60.7
Vehicle Noise: 63	3.4 63	.3	58.7		55.9		64.2	!	64.5
Centerline Distance to Noise Co	ontour (in feet)	7/) dBA	65	dBA		60 dBA		dBA
	La		13	03	и <i>Б</i> А 28		61	55	131
	LO	11.	13		∠8		01		131

Wednesday, November 22, 2023 Wednesday, November 22, 2023

	FHWA-RI	D-77-108 HIGH	WAY	NOISE	PREDIC	TION N	IODEL	(9/12/2	021)		
	io: E ne: Nisqualli R nt: w/o Hespei						Name: lumber:		alli Trailer L	_ot	
SITE Highway Data	SPECIFIC IN	IPUT DATA			Site Con				L INPUT	s	
					site Con	aitions	(Hara =				
Average Daily	. ,	17,346 vehicle	es					Autos:			
	Percentage:	7.00%				dium Tr					
Peak F	lour Volume:	1,214 vehicle	S		He	avy Tru	cks (3+	Axles):	15		
Ve	hicle Speed:	45 mph			/ehicle	Mix					
Near/Far La	ne Distance:	50 feet		H		icleType		Dav	Evenina	Niaht	Daily
Site Data							Autos:	80.9%		9.69	
	rrier Height:	0.0 feet			М	edium T	rucks:	84.6%	2.8%	12.69	
Barrier Type (0-V		0.0 feet				Heavy T	rucks:	82.4%	4.3%	13.39	
Centerline Di		50.0 feet									
Centerline Dist.		50.0 feet		1	Voise So				eet)		
Barrier Distance		0.0 feet				Auto		.000			
Observer Height		5.0 feet				m Truck		.297			
-	ad Elevation:	0.0 feet			Heav	ry Truck	s: 8	.004	Grade Ad	ljustmen	t: 0.0
	ad Elevation:	0.0 feet		1	Lane Eq	uivalen	t Distan	ce (in	feet)		
	Road Grade:	0.0%		H	-uno 24	Auto		.589			
	Left View:	-90.0 degree	200		Mediu	m Truck		.386			
	Right View:	90.0 degree				vy Truck		.405			
			55		77001	ry Truck	3. 40	.400			
FHWA Noise Mod					1			. 1			
VehicleType	REMEL	Traffic Flow	Dis	stance	_	Road	Fres		Barrier Att		rm Atten
Autos:	68.46			0.7	-	-1.20		-4.65		000	0.000
Medium Trucks:				0.8	_	-1.20		-4.87		000	0.000
Heavy Trucks:				0.8		-1.20		-5.43	0.0	000	0.000
Unmitigated Nois			_								
VehicleType	Leq Peak Hou		_	Leg E			Night		Ldn	_	NEL
Autos:			66.8		63.5		58.	-	67.		67.9
Medium Trucks:			56.7		48.0		49.		57.	-	57.9
Heavy Trucks:			64.7		57.9		58.	-	66.	-	66.1
Vehicle Noise:	69).3	69.1		64.7		61.	7	70.	0	70.3
Centerline Distant	ce to Noise Co	ontour (in feet,)						-		
				70 c		65	dBA	6	60 dBA	5	5 dBA
			Ldn:		50		108	3	233	3	501
		C	NEL:		53		114	1	245	5	527

Scenario: 0									alli Trailer L	ot	
Road Name: N						Job N	lumber:	15241			
Road Segment: v	v/o Hesperi	a Kd.									
	CIFIC IN	PUT DATA			Site Con				L INPUT	8	
Highway Data					Site Con	aitions	(Hara				
Average Daily Traf	. ,	22,567 vehicl	es					Autos.			
Peak Hour Per		7.00%				dium Tr		,			
Peak Hour		1,580 vehicle	S		He	avy Tru	cks (3+	Axles)	: 15		
	Speed:	45 mph		1	Vehicle i	Mix					
Near/Far Lane D	Distance:	50 feet			Veh	icleType	•	Day	Evening	Night	Daily
Site Data							Autos:	80.99	6 9.5%	9.6%	97.72%
Barrier	Heiaht:	0.0 feet			М	edium T	rucks:	84.69	6 2.8%	12.6%	0.73%
Barrier Type (0-Wall,		0.0			1	Heavy T	rucks:	82.49	6 4.3%	13.3%	1.55%
Centerline Dist. to		50.0 feet		1	Noise So	ource E	levatio	ns (in f	eet)		
Centerline Dist. to O		50.0 feet				Auto	s: (0.000			
Barrier Distance to O	bserver:	0.0 feet			Mediu	m Truck		297			
Observer Height (Abo	ve Pad):	5.0 feet				vy Truck		3.004	Grade Ad	ustment	0.0
Pad E	levation:	0.0 feet				•					
Road E	levation:	0.0 feet		1	Lane Eq				feet)		
Road	d Grade:	0.0%				Auto		3.589			
L	eft View:	-90.0 degre	es			m Truck		3.386			
Rig	ght View:	90.0 degre	es		Heav	y Truck	s: 43	3.405			
FHWA Noise Model Ca	alculations										
VehicleType F	REMEL	Traffic Flow	Dis	stance	Finite	Road	Fres	inel	Barrier Att	en Ber	m Atten
Autos:	68.46	0.05		0.7	9	-1.20		-4.65	0.0	000	0.00
Medium Trucks:	79.45	-21.21		0.8	2	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-17.94		0.8	2	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Le											
	Peak Hou			Leq E	vening	Leq	Night		Ldn		VEL
Autos:	68.	•	67.9		64.7		59		68.5		69.0
Medium Trucks:	57.	-	57.9		49.1		50		58.9		59.0
Heavy Trucks:	65.	9	65.8		59.0		59	.2	67.1	l	67.3
Vehicle Noise:	70.	4	70.3		65.8		62	.9	71.2	2	71.
Centerline Distance to	Noise Co.	ntour (in feet)							,	
			L	70 (dBA	65	dBA		60 dBA	55	dBA
			Ldn:		60		12	9	277		597
			NEL:		63		13		292		628

0	F.D					Danie of	A /	N.C.	00 T01	-4	
Scenario		a.					Name: umber:		lli Trailer L	.ot	
Road Segmen	e: Nisqualli R					JOD IV	umber:	15241			
Highway Data	SPECIFIC IN	IPUT DATA		5	Site Con	ditions			L INPUT:	5	
Average Daily	Traffic (Adt):	17.488 vehicl	Δe				(Autos:	15		
	Percentage:	7.00%	03		Me	dium Tru	icks (2		15		
	our Volume:	1.224 vehicle	20			avy Truc					
	hicle Speed:	45 mph		L			(-				
Near/Far Lar		50 feet		1	/ehicle						
					Veh	icleType		Day	Evening	Night	Daily
Site Data							lutos:	80.9%			97.089
	rier Height:	0.0 feet				edium Tr		84.6%		12.6%	
Barrier Type (0-Wa	all, 1-Berm):	0.0				Heavy Tr	'UCKS.'	82.4%	4.3%	13.3%	2.149
Centerline Dis		50.0 feet		1	Voise S	ource Ele	evation	ns (in fe	et)		
Centerline Dist. t		50.0 feet				Autos	s: 0	.000			
Barrier Distance t		0.0 feet			Mediu	m Trucks	s: 2	.297			
Observer Height (,	5.0 feet			Heav	y Trucks	s: 8	.004	Grade Ad	iustment.	0.0
	d Elevation:	0.0 feet		ļ.			D : 4				
	d Elevation:	0.0 feet		4	_ane ⊑q	uivalent			eet)		
F	Road Grade:	0.0%				Autos		.589			
	Left View:	-90.0 degre				m Trucks		.386			
	Right View:	90.0 degre	es		Heav	y Trucks	s: 43	.405			
FHWA Noise Mode					,						
Vehicle Type	REMEL	Traffic Flow		stance		Road	Fres		Barrier Att		m Atten
Autos:	68.46			0.79	-	-1.20		-4.65		000	0.00
Medium Trucks:	79.45			0.82		-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-17.66	,	0.82	2	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise								-			
	Leq Peak Hou			Leq Ev			Night		Ldn	-	VEL
Autos:		7.0	66.8		63.5		58.	-	67.4		67.
Medium Trucks:		7.0	57.0		48.3		50.	-	58.		58.
Heavy Trucks:_ Vehicle Noise:		3.2 9.8	66.1 69.7		59.3 65.0		59. 62.	-	67.4 70.7		67. 71.
					55.0		J2.		. 0.1	•	* 1.
Centerline Distanc	e to Noise Co	ontour (in fee	'/	70 c	iBA	65 (dBA	6	i0 dBA	55	dBA
			Ldn:		55		119	9	257		553

Wednesday, November 22, 2023

FHWA-R	D-77-108 HIGHV	NAY NOIS	SE PREDIC	TION N	IODEL (9/12	/2021)	
Scenario: OYC+P Road Name: Nisqualli F Road Segment: w/o Hespe				.,	Name: Nisq lumber: 1524	jualli Trailer Lo 41	t
SITE SPECIFIC I	NPUT DATA					DEL INPUTS	
Highway Data			Site Cor	ditions	(Hard = 10,	Soft = 15)	
Average Daily Traffic (Adt):	22,709 vehicles	;			Auto		
Peak Hour Percentage:	7.00%				ucks (2 Axle	-,	
Peak Hour Volume:	1,590 vehicles		He	avy Tru	cks (3+ Axle:	s): 15	
Vehicle Speed:	45 mph		Vehicle	Mix			
Near/Far Lane Distance:	50 feet		Veh	icleType	Day	Evening	Night Daily
Site Data				,	Autos: 80.9	9% 9.5%	9.6% 97.23%
Barrier Height:	0.0 feet		М	ledium T	rucks: 84.6	6% 2.8%	12.6% 0.77%
Barrier Type (0-Wall, 1-Berm):	0.0			Heavy T	rucks: 82.4	4% 4.3%	13.3% 2.00%
Centerline Dist. to Barrier:	50.0 feet		Noise S	ource El	evations (in	feet)	
Centerline Dist. to Observer:	50.0 feet			Auto		,	
Barrier Distance to Observer:	0.0 feet		Mediu	m Truck			
Observer Height (Above Pad):	5.0 feet			vy Truck		Grade Adju	stment: 0.0
Pad Elevation:	0.0 feet			•			
Road Elevation:	0.0 feet		Lane Eq		t Distance (i	n reet)	
Road Grade:	0.0%			Auto			
Left View:	-90.0 degrees			m Truck			
Right View:	90.0 degrees	3	пеа	vy Truck	s: 43.405		
FHWA Noise Model Calculation			•				
VehicleType REMEL	Traffic Flow	Distance		Road	Fresnel	Barrier Atte	
Autos: 68.46).79	-1.20	-4.6		
Medium Trucks: 79.45		-	0.82	-1.20	-4.8		
Heavy Trucks: 84.25).82	-1.20	-5.4	3 0.00	0.000
Unmitigated Noise Levels (with							
VehicleType Leq Peak Ho			Evening		Night	Ldn	CNEL
		7.9 8.1	64.7 49.3		59.9 51.1	68.6 59.1	69.0 59.2
		8.1 7.0	49.3 60.2		51.1 60.3	59.1 68.2	59.2 68.4
· · · · · · · · · · · · · · · · · · ·		0.7	66.1		63.4	71.7	72.0
Centerline Distance to Noise C	ontour (in feet)						
	(1000)	7	0 dBA	65	dBA	60 dBA	55 dBA
	1	dn:	64		139	299	645
	_						

dnesday, November 22, 2023

	FHWA-R	D-77-108 HIGH	WAY	NOIS	E PREDI	CTION N	/IODEL	9/12/2	2021)			
	io: HY ne: Nisqualli R nt: w/o Hespe						t Name: lumber:		alli Trailer	Lot		
	SPECIFIC II	NPUT DATA			0				EL INPU	TS		
Highway Data					Site Co.	naitions	(Hara =		oft = 15)			
Average Daily	. ,	26,019 vehicle	es					Autos				
	Percentage:	7.00%					rucks (2	/				
	lour Volume:	1,821 vehicles	S		Н	eavy Tru	icks (3+	Axles)	: 15			
	hicle Speed:	45 mph			Vehicle	Mix						
Near/Far La	ne Distance:	50 feet				nicleType	9	Day	Evening	Nig	ght	Daily
Site Data							Autos:	80.99	6 9.5%	6 9	9.6%	97.72%
Ba	rrier Heiaht:	0.0 feet			٨	fedium 7	rucks:	84.69	6 2.8%	6 12	2.6%	0.73%
Barrier Type (0-W		0.0				Heavy 1	rucks:	82.49	6 4.3%	6 13	3.3%	1.55%
Centerline Di		50.0 feet			Noise S	ource F	levation	e (in t	oot)			
Centerline Dist.	to Observer:	50.0 feet			140/36 0	Auto		.000	001)			
Barrier Distance	to Observer:	0.0 feet			Modi	ım Truck		.297				
Observer Height	(Above Pad):	5.0 feet				vy Truck		004	Grade A	dinetr	nent	0.0
P	ad Elevation:	0.0 feet			1100	vy macr		.004	0,000,1	ajuou		0.0
Ro	ad Elevation:	0.0 feet			Lane Ed	uivalen	t Distan	ce (in	feet)			
	Road Grade:	0.0%				Auto		.589				
	Left View:	-90.0 degree	es		Media	ım Truck	s: 43	.386				
	Right View:	90.0 degree	es		Hea	vy Truck	s: 43	.405				
FHWA Noise Mode	el Calculation	s										
VehicleType	REMEL	Traffic Flow	Di	stance		Road	Fres		Barrier A		Bern	n Atten
Autos:	68.46				79	-1.20		-4.65	-	0.000		0.000
Medium Trucks:					82	-1.20		-4.87		0.000		0.000
Heavy Trucks:	84.25	-17.32		0.	82	-1.20		-5.43	C	0.000		0.000
Unmitigated Noise	e Levels (with	out Topo and	barri	er atte	nuation)							
VehicleType	Leq Peak Ho		_	Leq l	Evening		Night		Ldn		CN	
Autos:	68	3.7	68.6		65.3	3	60.	5	69	9.2		69.6
Medium Trucks:			58.5		49.		51.	-		9.5		59.6
Heavy Trucks:			66.5		59.6		59.	_		7.7		67.9
Vehicle Noise:	71	1.0	70.9		66.4		63.	5	71	1.8		72.1
Centerline Distant	ce to Noise C	ontour (in feet))									
			L	70	dBA	65	dBA		60 dBA		55 c	
			Ldn:		66		142	-	30			657
		CI	VEL:		69		149	9	32	21		691

		77-108 HIGH						•			
Scenario: E									ılli Trailer L	ot	
Road Name: Nisqu						Job N	lumber	15241			
Road Segment: e/o He	esperia	Rd.									
SITE SPECIF	C INP	UT DATA			0:4- 0				L INPUT	S	
Highway Data					Site Cor	naitions	(Hara				
Average Daily Traffic (A		3,227 vehicle	es					Autos:			
Peak Hour Percenta		7.00%				edium Ti		,			
Peak Hour Volui		226 vehicle	S		He	eavy Tru	icks (3+	· Axles):	15		
Vehicle Spe		45 mph			Vehicle	Mix					
Near/Far Lane Distar	ce:	50 feet			Veh	nicleType	э	Day	Evening	Night	Daily
Site Data							Autos:	80.9%	9.5%	9.6%	97.72%
Barrier Heig	ıht:	0.0 feet			M	1edium 7	rucks:	84.6%	2.8%	12.6%	0.73%
Barrier Type (0-Wall, 1-Ber	m):	0.0				Heavy 7	rucks:	82.4%	4.3%	13.3%	1.55%
Centerline Dist. to Ban		50.0 feet		Ī	Noise S	ource E	levatio	ns (in f	eet)		
Centerline Dist. to Obser		50.0 feet				Auto	s: (0.000			
Barrier Distance to Obser	/er:	0.0 feet			Mediu	ım Truck	s:	2.297			
Observer Height (Above Pa	,	5.0 feet			Hea	vy Truck	s: l	3.004	Grade Adj	ustment	0.0
Pad Elevat		0.0 feet		-		•					
Road Elevat		0.0 feet		-	Lane Eq				feet)		
Road Gra		0.0%				Auto		3.589			
Left Vi		-90.0 degree	es			ım Truck		3.386			
Right Vi	ew:	90.0 degree	es		Hea	vy Truck	(S: 4:	3.405			
FHWA Noise Model Calcul											
VehicleType REME		raffic Flow	Dis	stance		Road	Fre		Barrier Atte		m Atten
	8.46	-8.40		0.7	-	-1.20		-4.65	0.0		0.00
	9.45	-29.66		8.0	_	-1.20		-4.87		000	0.00
,	34.25	-26.39		8.0	_	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise Levels	_										
VehicleType Leq Pea		Leq Day		Leq E	vening		Night		Ldn		VEL
Autos:	59.7		59.5		56.2	-	51		60.1		60.0
Medium Trucks:	49.4		49.4		40.7		42		50.4		50.0
Heavy Trucks:	57.5		57.4		50.6		50		58.7		58.
Vehicle Noise:	62.0		61.8		57.3	3	54	.4	62.7	7	63.0
Centerline Distance to Noi	se Con	tour (in feet)								
			L	70	dBA	65	dBA		60 dBA	55	dBA
			Ldn:		16			15	76		163
			NEL:		17			7	80		172

Scanari	o: HY+P					Project	Nama:	Micauo	lli Trailer L	ot	
	o. nite e: Nisqualli Ro	4					umber:		III ITAIIEI L	.01	
Road Segmen						300 14	uniber.	10241			
	SPECIFIC IN					N	OISE	MODE	L INPUT	s	
Highway Data				Si	ite Con	ditions					
Average Daily	Traffic (Adt):	26,161 vehicle	es					Autos:	15		
Peak Hour I	Percentage:	7.00%			Ме	dium Tru	icks (2)	Axles):	15		
Peak He	our Volume:	1,831 vehicle	S		He	avy Truc	ks (3+)	Axles):	15		
Vel	nicle Speed:	45 mph		V	ehicle l	Miv					
Near/Far Lar	ne Distance:	50 feet		-		icleType		Dav	Evenina	Niaht	Dailv
Site Data							lutos:	80.9%		,	97.299
Rar	rier Height:	0.0 feet			М	edium Ti	ucks:	84.6%	2.8%	12.6%	0.769
Barrier Type (0-Wa	-	0.0			1	Heavy Ti	ucks:	82.4%	4.3%	13.3%	1.949
Centerline Dis	. ,	50.0 feet			-: 0-	51		- /: #-	-41		
Centerline Dist. t	o Observer:	50.0 feet		N	oise so	ource El			et)		
Barrier Distance t	o Observer:	0.0 feet			Maratic.	Auto: m Truck:		000 297			
Observer Height ()	Above Pad):	5.0 feet						297 004	Grade Ad	iuatmant	
Pa	d Elevation:	0.0 feet			Heav	y Truck	5. 8.	004	Grade Adj	iusimeni.	0.0
Roa	d Elevation:	0.0 feet		La	ane Eq	uivalent	Distan	ce (in f	feet)		
F	Road Grade:	0.0%				Auto	3: 43.	589			
	Left View:	-90.0 degree	es		Mediu	m Truck	3: 43.	386			
	Right View:	90.0 degree	es		Heav	y Truck	3: 43.	405			
FHWA Noise Mode	I Calculation	s									
VehicleType	REMEL	Traffic Flow	Dist	ance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	68.46	0.67		0.79		-1.20		-4.65	0.0	000	0.00
Medium Trucks:	79.45	-20.39		0.82		-1.20		-4.87		000	0.00
Heavy Trucks:	84.25	-16.32		0.82		-1.20		-5.43	0.0	000	0.00
Unmitigated Noise			barrie	r attenu	ation)			,			
	Leq Peak Hou			Leq Eve			Night		Ldn	-	VEL
Autos:	68		68.6		65.3		60.	-	69.2	-	69.
Medium Trucks:	58		58.7		49.9		51.		59.7		59.
Heavy Trucks:	67		67.5		60.6		60.8	-	68.7		68.
Vehicle Noise:	71		71.3		66.7		64.0	ט	72.2	2	72.
Centerline Distanc	e to Noise Co	ontour (in feet	<u>'</u>	70 45	2.4	GE.	AD A	-	O ADA		dD A
Centerline Distanc	e to Noise Co	ontour (in feet	Ldn:	70 dE	3 <i>A</i> 70	65	dBA 151		i0 dBA 326		dBA 70:

Wednesday, November 22, 2023

	FHWA-RD	-77-108 HIGHV	VAY NO	ISE PRED	ICTION N	MODEL	(9/12/2	2021)		
Scenario Road Name Road Segment	: Nisqualli Rd					t Name: lumber:		alli Trailer L	ot	
	PECIFIC IN	PUT DATA						EL INPUT	S	
Average Daily T Peak Hour F	. ,	3,404 vehicles	;		nditions Medium Tr	,	Autos	: 15		
	ur Volume:	238 vehicles		1	leavy Tru	cks (3+	Axles)	: 15		
Veh Near/Far Lan	icle Speed: e Distance:	45 mph 50 feet		Vehicl	e Mix		Dav	Evening	Night	Dailv
Site Data				-		Autos:	80.99	-	9.6%	. ,
Barrier Type (0-Wa	. ,	0.0 feet 0.0			Medium T Heavy T		84.69 82.49		12.6% 13.3%	
Centerline Dist		50.0 feet		Noise	Source E	levation	ıs (in t	eet)		
Centerline Dist. to Barrier Distance to Observer Height (A Pad	Observer:	50.0 feet 0.0 feet 5.0 feet 0.0 feet			Auto ium Truck avy Truck	s: 2	.000 .297 .004	Grade Ad	iustmen	t: 0.0
Road	d Elevation:	0.0 feet		Lane E	quivalen	t Distar	ce (in	feet)		
	oad Grade: Left View: Right View:	0.0% -90.0 degrees 90.0 degrees			Auto ium Truck avy Truck	s: 43	.589 .386 .405			
FHWA Noise Model	Calculations	;								
VehicleType	REMEL	Traffic Flow	Distanc	e Fini	te Road	Fres	nel	Barrier Att	en Be	rm Atten
Autos:	68.46	-8.31		0.79	-1.20		-4.65		000	0.000
Medium Trucks: Heavy Trucks:	79.45 84.25	-28.24 -21.48		0.82 0.82	-1.20 -1.20		-4.87 -5.43		000	0.000
Unmitigated Noise	Levels (with	ut Topo and b	arrier at	tenuation)					
VehicleType L	eq Peak Hou	r Leq Day	Lei	q Evening	Leq	Night		Ldn	C	NEL
Autos:	59.	7 5	9.6	56	.3	51.		60.2		60.6
Medium Trucks:	50.		0.9	42		43.	-	51.9	-	52.0
Heavy Trucks: Vehicle Noise:	62.		2.3 4.4	55 59		55. 57.	-	63.6		63.7 65.7
			4.4	59	.0	57.	3	00.4	+	00.7
Centerline Distance	to Noise Co	ntour (in feet)		70 dBA	65	dBA	T	60 dBA	55	5 dBA
		L	dn:	2	5	5	3	115		247
		CN	EL:	2	6	5	5	119		257

Wednesday, November 22, 2023 Wednesday, November 22, 2023

	FHWA-RE)-77-108 HIGH	WAY	' NOISE	PREDI	CTION N	IODEL	(9/12/2	021)			
Scenario Road Name Road Segment	: Nisqualli Ro						t Name: lumber:		alli Trailer I	_ot		
SITE S Highway Data	PECIFIC IN	PUT DATA			Sito Co	l nditions			L INPUT	S		
Average Daily T Peak Hour F Peak Ho	Percentage: ur Volume:	8,724 vehicle 7.00% 611 vehicles			М	edium Tr	ucks (2	Autos: Axles):	15 15			
	icle Speed:	45 mph			Vehicle	Mix						
Near/Far Lan	e Distance:	50 feet		Ī	Vel	hicleType	9	Day	Evening	Nigh	t Da	ily
Site Data							Autos:	80.9%	9.5%	9.6	% 97.	72%
Barr	ier Height:	0.0 feet				1edium T		84.6%		12.6		73%
Barrier Type (0-Wa	II, 1-Berm):	0.0				Heavy T	rucks:	82.4%	4.3%	13.3	1.5	55%
Centerline Dist	to Barrier:	50.0 feet		F	Noise S	ource E	levatio	ns (in f	eet)			
Centerline Dist. to	Observer:	50.0 feet				Auto		.000	,			_
Barrier Distance to	Observer:	0.0 feet			Medii	ım Truck		.297				
Observer Height (A	,	5.0 feet			Hea	vy Truck	s: 8	.004	Grade Ad	ljustme	nt: 0.0	
	d Elevation:	0.0 feet		L								
	d Elevation:	0.0 feet		L	Lane Ed	quivalen			feet)			
R	oad Grade:	0.0%				Auto		.589				
ı	Left View: Right View:	-90.0 degree				ım Truck vy Truck		.386 .405				
FHWA Noise Model	Calculations	S										_
VehicleType	REMEL	Traffic Flow	Di:	stance	Finite	Road	Fres	nel	Barrier At	ten E	Berm At	ten
Autos:	68.46	-4.08		0.7	9	-1.20		-4.65	0.	000	0	.00
Medium Trucks:	79.45	-25.34		8.0	-	-1.20		-4.87		000		.000
Heavy Trucks:	84.25	-22.07		8.0	32	-1.20		-5.43	0.	000	0	.000
Unmitigated Noise		-						_				
	.eq Peak Hou			Leq E	vening		Night		Ldn		CNEL	
Autos:	64		63.8		60.5	-	55	-	64.			64.9
Medium Trucks:	53		53.8		45.0	-	46		54.	-		54.9
Heavy Trucks:	61		61.7		54.9		55		63.			63.2
Vehicle Noise:	66		66.2		61.7	'	58	.1	67.	U		67.4
Centerline Distance	to Noise Co	ntour (in feet))	70	dBA	65	dBA	1	60 dBA	1	55 dBA	
			Ldn:	, 0	32		6	_	147			317
			NEL:		33		7		155			333
		O,	•		33			_	100	,		000

Scenario: HY Road Name: Nisqualli Rd. Road Segment: e/o Hesperia Rd. SITE SPECIFIC INPUT DATA Highway Data						: Nisqua : 15241	lli Trailer L	ot	
Highway Data							L INPUT	s	
Average Daily Traffic (Adt): 9,366 vehicle: Peak Hour Percentage: 7.00% Peak Hour Volume: 656 vehicles Vehicle Speed: 45 mph			Ме	dium Tr avy Tru	ucks (2	Autos: Axles): Axles):	15 15		
Near/Far Lane Distance: 50 feet		-		icleType	•	Dav	Evening	Night	Dailv
Site Data					Autos:	80.9% 84.6%	9.5%	9.6%	97.72%
Barrier Height: 0.0 feet Barrier Type (0-Wall, 1-Berm): 0.0				Heavy T		82.4%		13.3%	
Centerline Dist. to Barrier: 50.0 feet Centerline Dist. to Observer: 50.0 feet		N	oise So	urce E	levatio	ns (in fe	eet)		-
Barrier Distance to Observer: 0.0 feet Observer Height (Above Pad): 5.0 feet Pad Elevation: 0.0 feet Road Elevation: 0,0 feet Road Grade: 0.0%		Lá	Heav	Auto	s: 2 s: 8 t Distai	0.000 2.297 3.004 nce (in 1	Grade Adj	iustment	: 0.0
Left View: -90.0 degree:				m Truck ry Truck		3.386 3.405			
FHWA Noise Model Calculations		<u> </u>							
VehicleType REMEL Traffic Flow	Distar			Road	Fres		Barrier Atte		m Atten
Autos: 68.46 -3.77 Medium Trucks: 79.45 -25.03 Heavy Trucks: 84.25 -21.76		0.79 0.82 0.82		-1.20 -1.20 -1.20		-4.65 -4.87 -5.43	0.0	000 000 000	0.00 0.00 0.00
Unmitigated Noise Levels (without Topo and b	arrier a	attenu	ation)						
VehicleType Leq Peak Hour Leq Day		eq Eve		Leg	Night		Ldn	CI	NEL
Autos: 64.3 6	64.1		60.8		56	.1	64.7	7	65.2
Medium Trucks: 54.0 5	4.1		45.3		47	.0	55.1	1	55.
	2.0		55.2		55		63.3		63.
	6.5		62.0		59	.0	67.3	3	67.
Centerline Distance to Noise Contour (in feet)									
	. L	70 dE		65	dBA		0 dBA		dBA
	.dn:		33			2	154		332
CN	EL:		35		7	5	162		350

		D-77-108 HIG		E			•				
	o: OYC+P								lli Trailer L	.ot	
	e: Nisqualli R					Job N	umber:	15241			
Road Segmer	nt: e/o Hesper	ia Rd.									
	SPECIFIC IN	IPUT DATA							L INPUT	S	
Highway Data					Site Con	ditions	(Hard =	10, So	ft = 15)		
Average Daily	Traffic (Adt):	8,901 vehic	les					Autos:	15		
Peak Hour	Percentage:	7.00%			Me	dium Tru	ıcks (2 i	Axles):	15		
Peak H	our Volume:	623 vehicl	es		He	avy Truc	ks (3+)	4xles):	15		
Ve	hicle Speed:	45 mph		- 1	Vehicle I	Mix					
Near/Far La	ne Distance:	50 feet				icleType		Dav	Evenina	Night	Dailv
Site Data							lutos:	80.9%	9.5%		96.489
Rai	rier Heiaht:	0.0 feet			M	edium Tr	ucks:	84.6%	2.8%	12.6%	0.829
Barrier Type (0-W		0.0			1	Heavy Tr	ucks:	82.4%	4.3%	13.3%	2.70%
Centerline Dis	. ,	50.0 feet		L							
Centerline Dist		50.0 feet		1	Noise So				et)		
Barrier Distance		0.0 feet				Autos		000			
Observer Height (5.0 feet				m Trucks		297			
	ad Flevation:	0.0 feet			Heav	y Trucks	s: 8.	004	Grade Ad	iustment.	0.0
	ad Elevation:	0.0 feet		1	Lane Eq	uivalent	Distan	ce (in t	eet)		
	Road Grade:	0.0%			· ·	Autos	s: 43.	589			
	Left View:	-90.0 degre	ees		Mediu	m Trucks	: 43.	386			
	Right View:	90.0 degre			Heav	y Trucks	3: 43.	405			
FHWA Noise Mode	d Calculation										
VehicleType	REMEL	Traffic Flow	Di	stance	Finite	Road	Fresi	nel	Barrier Att	en Ber	m Atten
Autos:	68.46			0.7		-1.20		-4.65		000	0.00
Medium Trucks:	79.45	-24.7	6	0.8	2	-1.20		-4.87	0.0	000	0.00
Heavy Trucks:	84.25	-19.5	8	0.8	2	-1.20		-5.43	0.0	000	0.00
Unmitigated Noise	Levels (with	out Topo and	d barri	er atten	uation)						
VehicleType	Leq Peak Hou	ur Leq Da	ay .	Leq E	vening	Leq	Night		Ldn	CI	VEL
Autos:	64	1.0	63.8		60.6		55.8	3	64.5	5	64.
Medium Trucks:	54	1.3	54.3		45.6		47.3	3	55.3	3	55.
Heavy Trucks:	64	1.3	64.2		57.4		57.0	3	65.5	5	65.
Vehicle Noise:	67	7.4	67.3		62.4		60.0	0	68.2	2	68.
Centerline Distanc	e to Noise C	ontour (in fee	et)								
			Į	70 0	dBA	65 (i0 dBA		dBA
			Ldn:		38		82		177		381
			CNEL:		40		86		185		398

Wednesday, November 22, 2023

FHWA-R	D-77-108 HIGHW	AY NOISI	E PREDIC	TION M	IODEL (9/12	2/2021)		
Scenario: HY+P Road Name: Nisqualli R Road Segment: e/o Hesper				.,	Name: Niso lumber: 152	qualli Trailer L 41	_ot	
SITE SPECIFIC II	NPUT DATA					DEL INPUT	s	
Highway Data			Site Con	ditions	(Hard = 10,	Soft = 15)		
Average Daily Traffic (Adt):	9,543 vehicles				Auto	os: 15		
Peak Hour Percentage:	7.00%				ucks (2 Axle	-,		
Peak Hour Volume:	668 vehicles		He	avy Truc	cks (3+ Axle	s): 15		
Vehicle Speed:	45 mph		Vehicle I	Mix				
Near/Far Lane Distance:	50 feet			icleType	Day	/ Evening	Night	Daily
Site Data					Autos: 80.	9% 9.5%	9.6%	96.56%
Barrier Height:	0.0 feet		M	edium T	rucks: 84.	6% 2.8%	12.6%	0.81%
Barrier Type (0-Wall, 1-Berm):	0.0		1	Heavy T	rucks: 82.	4% 4.3%	13.3%	2.62%
Centerline Dist. to Barrier:	50.0 feet		Noise So	ource El	evations (ii	r feet)		
Centerline Dist. to Observer:	50.0 feet			Auto				
Barrier Distance to Observer:	0.0 feet		Mediu	m Truck				
Observer Height (Above Pad):	5.0 feet			y Truck		Grade Ad	ljustment:	0.0
Pad Elevation:	0.0 feet			•				
Road Elevation:	0.0 feet		Lane Eq		t Distance (
Road Grade:	0.0%			Auto				
Left View:	-90.0 degrees			m Truck				
Right View:	90.0 degrees		Heav	y Truck	s: 43.405			
FHWA Noise Model Calculation	ıs							
VehicleType REMEL	Traffic Flow	Distance	Finite	Road	Fresnel	Barrier Att	ten Beri	n Atten
Autos: 68.46	-3.74	0.	79	-1.20	-4.0	65 O.	000	0.000
Medium Trucks: 79.45			82	-1.20	-4.8		000	0.000
Heavy Trucks: 84.25	-19.40	0.	82	-1.20	-5.4	13 0.	000	0.000
Unmitigated Noise Levels (with	out Topo and ba	rrier atte	nuation)					
VehicleType Leq Peak Ho			Evening	Leq	Night	Ldn		IEL
	1.3 64		60.9		56.1	64.		65.2
	1.6 54		45.8		47.6	55.		55.7
	1.5 64		57.6		57.7	65.		65.8
Vehicle Noise: 67	7.6 67	.5	62.6		60.3	68.	5	68.8
Centerline Distance to Noise C	ontour (in feet)							
			dBA	65	dBA	60 dBA		dBA
	Ld		39		85	183		395
	CNE	L:	41		89	192	2	413

Wednesday, November 22, 2023 Wednesday, November 22, 2023

APPENDIX 9.1:

CADNAA OPERATIONAL NOISE CALCULATIONS



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15241 - Nisqualli Truck Trailer Lot

CadnaA Noise Prediction Model: 15241-02.cna

Date: 09.08.23 Analyst: B. Lawson

Calculation Configuration

Configurat	ion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID		Level Lr		Lir	nit. Valı	ue		Land	Use	Height	:	C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Υ	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	42.2	42.2	48.9	65.0	55.0	0.0				5.00	а	6250995.33	2488703.64	5.00
RECEIVERS		R2	47.8	47.8	54.4	65.0	55.0	0.0				35.00	а	6251378.42	2487017.79	35.00
RECEIVERS		R3	45.2	45.2	51.8	65.0	55.0	0.0				35.00	а	6251367.81	2485916.33	35.00
RECEIVERS		R4	34.6	34.6	41.2	65.0	55.0	0.0				5.00	а	6247546.48	2483984.94	5.00
RECEIVERS		R5	38.1	38.1	44.8	65.0	55.0	0.0				5.00	а	6247772.16	2485424.09	5.00
RECEIVERS		R6	39.3	39.3	46.0	65.0	55.0	0.0				5.00	a	6247684.85	2486418.81	5.00

Line Source(s)

Name	M.	ID	R	esult. PW	'L	R	esult. PW	L'		Lw / L	i	Op	erating Ti	me		Moving	Pt. Src		Heigl	nt
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night		Number		Speed		\Box
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)	Day	Evening	Night	(mph)	(ft)	П
LINESOURCE		TRUCK01	93.2	93.2	93.2	71.2	71.2	71.2	Lw	93.2									8	а
LINESOURCE		TRUCK02	93.2	93.2	93.2	63.5	63.5	63.5	Lw	93.2									8	а

Name	ID	ŀ	lei	ght			Coordinat	es	
		Begin		End		х	У	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
LINESOURCE	TRUCK01	8.00	а		Г	6250478.87	2487091.03	8.00	0.00
						6249960.41	2487092.90	8.00	0.00
LINESOURCE	TRUCK02	8.00	а			6248819.22	2486801.19	8.00	0.00
					Г	6249963.54	2486798.07	8.00	0.00
					Г	6249956.04	2487285.29	8.00	0.00
						6250318.33	2487284.67	8.00	0.00
						6250342.46	2487269.82	8.00	0.00
					П	6250365.12	2487252.81	8.00	0.00

Name	ID	Hei	ight		Coordinat	es	
		Begin	End	х	У	Z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6250386.12	2487233.79	8.00	0.00
				6250405.27	2487212.91	8.00	0.00
				6250422.42	2487190.36	8.00	0.00
				6250437.42	2487166.32	8.00	0.00
				6250450.13	2487141.00	8.00	0.00
				6250512.60	2487030.44	8.00	0.00
				6250528.21	2486941.11	8.00	0.00
				6250533.21	2486890.52	8.00	0.00
				6249962.29	2486896.76	8.00	0.00

Area Source(s)

AICU JUU		C(3)														
Name	M.	ID	R	esult. PW	'L	Re	esult. PW	L"		Lw/L	i	Op	erating T	me	Heigh	t
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	Γ
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
AREASOURCE		DOCK01	103.4	103.4	103.4	69.4	69.4	69.4	Lw	103.4					8	a
AREASOURCE		DOCK02	103.4	103.4	103.4	67.2	67.2	67.2	Lw	103.4					8	a
AREASOURCE		DOCK03	103.4	103.4	103.4	66.2	66.2	66.2	Lw	103.4					8	a
AREASOURCE		DOCK04	103.4	103.4	103.4	68.9	68.9	68.9	Lw	103.4					8	a

Name	ID	H	lei	ght		Coordinat	es	
		Begin		End	х	у	z	Ground
		(ft)		(ft)	(ft)	(ft)	(ft)	(ft)
AREASOURCE	DOCK01	8.00	а		6249860.78	2487311.53	8.00	0.00
					6249923.87	2487311.53	8.00	0.00
					6249919.50	2486867.41	8.00	0.00
					6249860.78	2486867.41	8.00	0.00
AREASOURCE	DOCK02	8.00	а		6249993.21	2487244.69	8.00	0.00
					6250319.27	2487245.94	8.00	0.00
					6250319.89	2487185.35	8.00	0.00
					6250401.10	2487182.85	8.00	0.00
					6250400.47	2487121.63	8.00	0.00
					6249994.46	2487124.76	8.00	0.00
AREASOURCE	DOCK03	8.00	а		6249994.46	2487049.18	8.00	0.00
					6250466.68	2487046.68	8.00	0.00
					6250468.56	2486928.00	8.00	0.00
					6249995.08	2486930.49	8.00	0.00
AREASOURCE	DOCK04	8.00	а		6250059.42	2486853.66	8.00	0.00
					6250556.01	2486857.41	8.00	0.00
					6250566.63	2486794.32	8.00	0.00
					6250063.17	2486796.20	8.00	0.00

APPENDIX 10.1:

CADNAA CONSTRUCTION NOISE CALCULATIONS



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15241 - Nisqualli Truck Trailer Lot

CadnaA Noise Prediction Model: 15241-02_Construction.cna

Date: 09.08.23 Analyst: B. Lawson

Calculation Configuration

Configurat	ion
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.01
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	999.99
Min. Length of Section (#(Unit,LEN))	1.01
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	5.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	2
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Incl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (FTA/FRA)	
Aircraft (???)	
Strictly acc. to AzB	

Receiver Noise Levels

Name	M.	ID		Level Lr		Lir	nit. Val	ue		Land	Use	Height		C	oordinates	
			Day	Night	CNEL	Day	Night	CNEL	Туре	Auto	Noise Type			Х	Υ	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
RECEIVERS		R1	48.2	48.2	54.8	65.0	55.0	0.0				5.00	а	6250995.33	2488703.64	5.00
RECEIVERS		R2	53.7	53.7	60.3	65.0	55.0	0.0				35.00	а	6251378.42	2487017.79	35.00
RECEIVERS		R3	50.8	50.8	57.5	65.0	55.0	0.0				35.00	а	6251367.81	2485916.33	35.00
RECEIVERS		R4	40.7	40.7	47.3	65.0	55.0	0.0				5.00	а	6247546.48	2483984.94	5.00
RECEIVERS		R5	44.4	44.4	51.0	65.0	55.0	0.0				5.00	а	6247772.16	2485424.09	5.00
RECEIVERS		R6	45.8	45.8	52.5	65.0	55.0	0.0				5.00	а	6247684.85	2486418.81	5.00

Area Source(s)

Name	M.	ID	R	esult. PW	/L	Re	esult. PW	L"		Lw / L	i	Ope	erating Ti	me	Height	:]
			Day	Evening	Night	Day	Evening	Night	Туре	Value	norm.	Day	Special	Night	(ft)	П
			(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	(min)	(min)	(min)		
SITEBOUNDARY		SITEBOUNDARY00001	115.6	115.6	115.6	69.5	69.5	69.5	Lw	115.6					8	а

Name	ID	-	Hei	ght			Coordinat	es	
		Begin		End		х	У	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
SITEBOUNDARY	SITEBOUNDARY00001	8.00	а			6248819.26	2486822.40	8.00	0.00
						6249854.81	2486819.26	8.00	0.00
						6249856.05	2487414.16	8.00	0.00
						6250095.04	2487413.56	8.00	0.00
					Г	6250129.09	2487411.77	8.00	0.00
					Г	6250162.93	2487407.68	8.00	0.00
						6250196.42	2487401.33	8.00	0.00
						6250229.41	2487392.75	8.00	0.00
						6250229.35	2487361.39	8.00	0.00

Name	ID	He	eight		Coordinat	es	
		Begin	End	х	у	Z	Ground
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				6250262.54	2487349.59	8.00	0.00
				6250294.76	2487335.37	8.00	0.00
				6250325.84	2487318.81	8.00	0.00
				6250355.62	2487299.99	8.00	0.00
				6250383.92	2487279.02	8.00	0.00
				6250410.59	2487256.02	8.00	0.00
				6250435.48	2487231.10	8.00	0.00
				6250458.47	2487204.42	8.00	0.00
				6250479.42	2487176.10	8.00	0.00
				6250498.21	2487146.32	8.00	0.00
				6250514.76	2487115.23	8.00	0.00
				6250528.96	2487082.99	8.00	0.00
				6250540.73	2487049.80	8.00	0.00
				6250550.02	2487015.83	8.00	0.00
				6250583.96	2486775.28	8.00	0.00
				6248819.18	2486778.39	8.00	0.00

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